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JANUARY 2009

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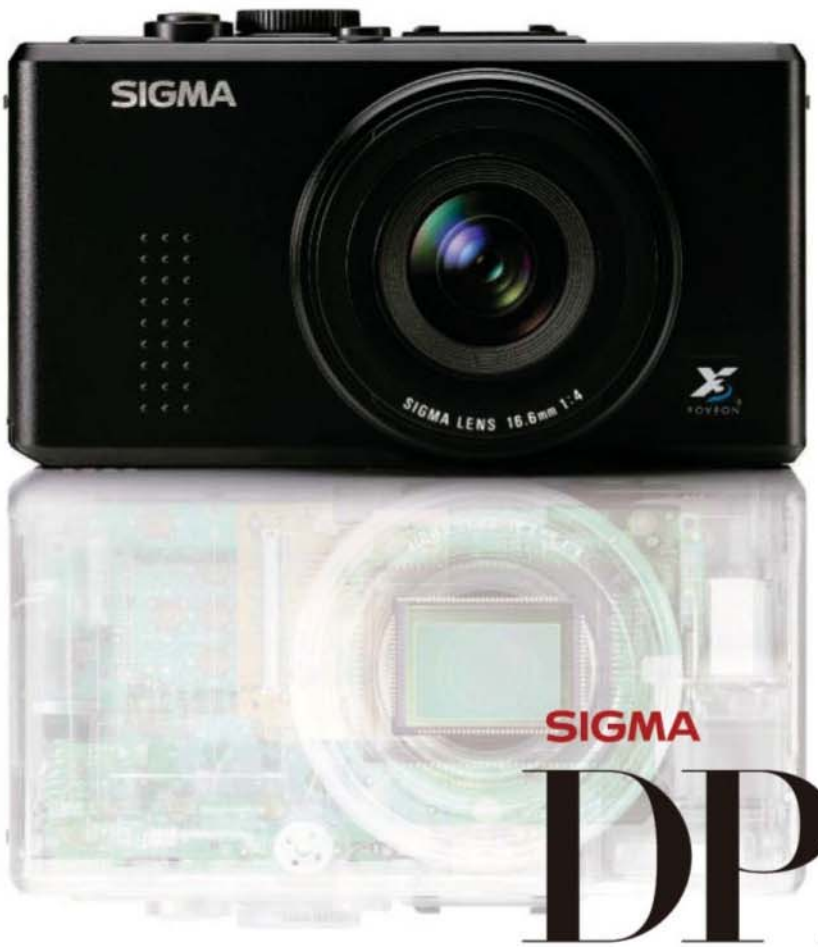

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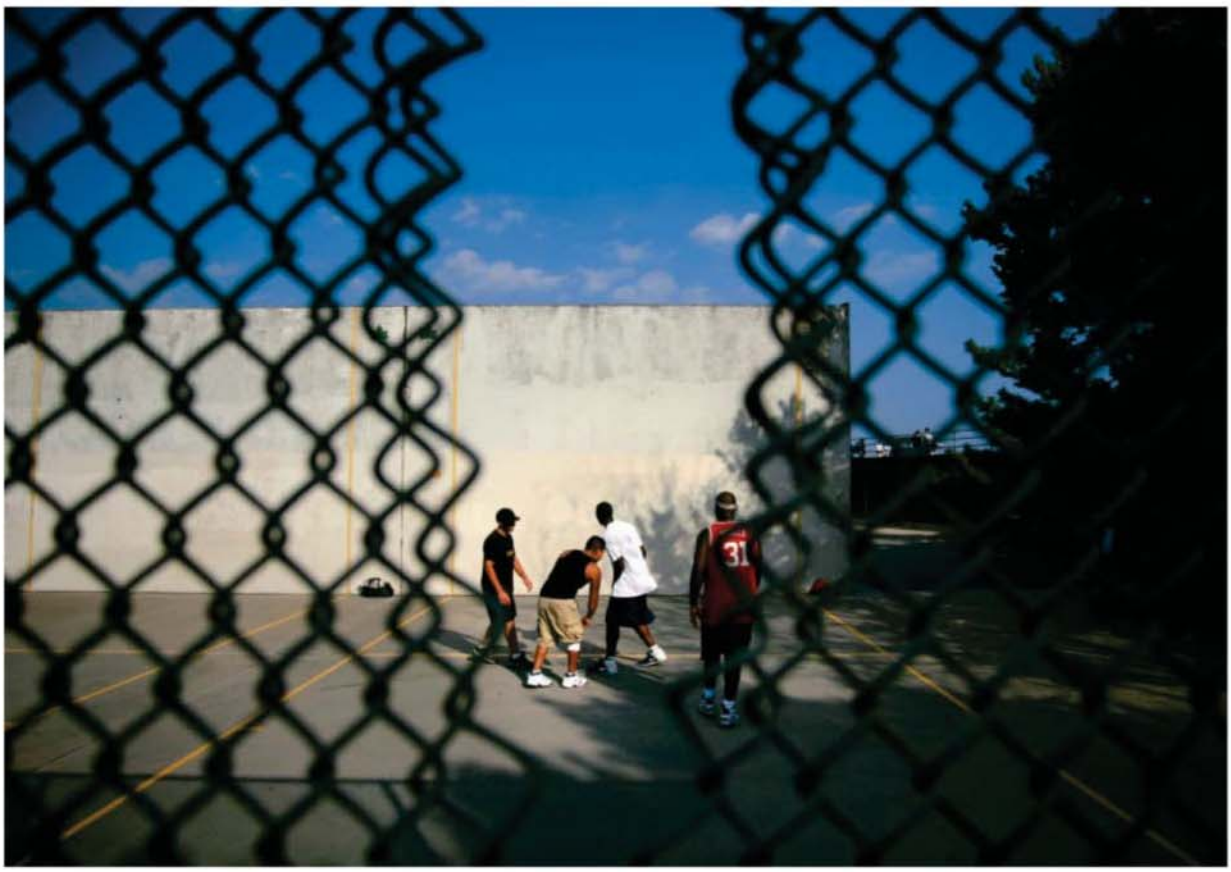

OUR WORLD

Liz O. Baylen / Born in 1979, she graduated from Ohio University's School of Visual Communications in 2001 and began working for The Washington Times. She has covered assignments around the world and was selected as a finalist for the Pulitzer Prize while with The Washington Times. Most recently, her images have appeared in several major newspapers. Shooting data: SIGMA 18-125mm F3.8-5.6 DC OS HSM, 1/1600 at f5.6.

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Nick Didlick on location at the Great Wall in Beijing using a Nikon D700 and a Lexar Professional UDMA 300x CompactFlash card.

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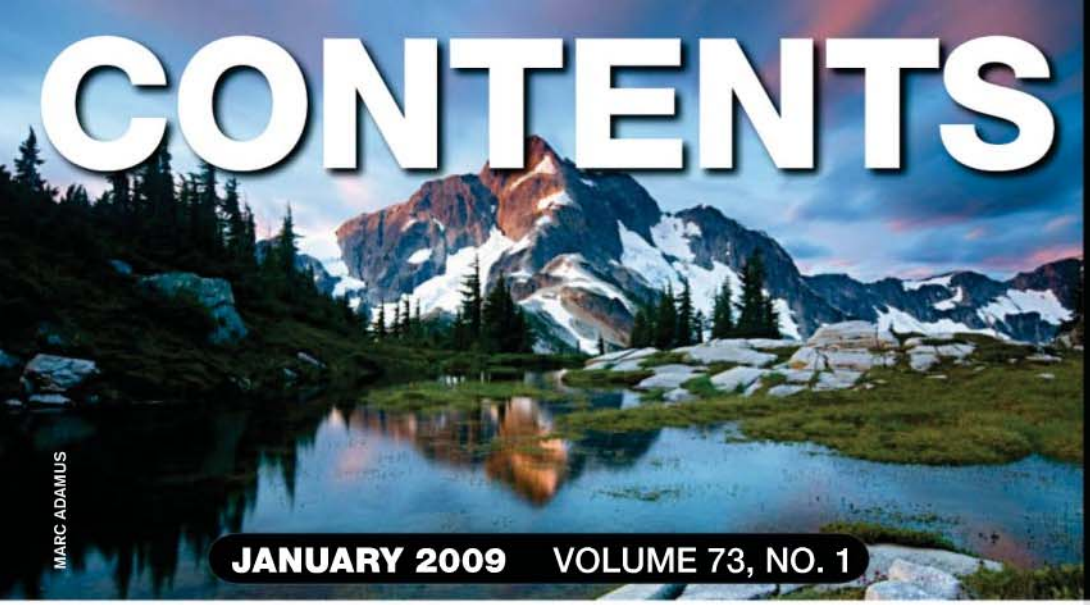

MARC ADAMUS

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Get your camera and your sense of adventure ready: The Mentor Series, along with Nikon professional photographers Joe McNally and Tom Bol, are hosting an unforgettable journey to Japan, a country full of the boisterous and the serene, the kitschy and the traditional, the ultimate urban and the simply rural. No other place juxtaposes more sides of life than Japan and, not surprisingly, few offer more astonishing and once-in-a-lifetime photo ops.

You will arrive first in Tokyo, a city bustling with a palpable energy and sense of purpose. Amid the hustle of seemingly sprinting passers-by, the electric lights flashing in currents and streams, and the quieter scenes speaking of older traditions, freeze moments in time and capture what this remarkable city is all about. On a morning sightseeing tour, visit the Tokyo Tower Observatory and let your lens take in bird's-eye-view perspectives of this unfolding urban expanse. Of course, no visit to Tokyo would be complete without stopping by the Imperial Palace, home to the Emperor of Japan and quite a stunning architectural marvel to behold. The Sensoji (also known as Asakusa Kannon Temple) is another photo hot-spot: a Buddhist temple containing 7th century gates and pagoda buildings, the grounds also contain a shopping street, known as Nakamise Arcade, where many colorful Japanese souvenirs such as kimonos and folding fans are sold.

Next, journey to the natural wonder that has enraptured many an artist, poet and sightseer: Mt. Fuji. Capture in photographs what mere words cannot. This peak, the highest in all of Japan, is an active volcano (don't worry, it hasn't erupted in over 300 years!) with an exceptionally symmetrical cone shape which stands beautifully against the sky, whether on cloudy or clear day. Lake Yamanaka, the largest of the Fuji Five Lakes, offers breathtaking views of some of the natural flora and fauna surrounding the great mountain peak. Traveling on to Hakone, introduce your camera to a whole new viewpoint as you ride on the Mt. Komagatake Ropeway, an aerial lift line which climbs Mt. Komagatake from the shoreline of Lake Ashi. You'll get even more photos of this serene body of water from aboard a Lake Ashi boat cruise, which will take you from one end of the lake to the other, with amazing views of Mt. Fuji and Mt. Hakone along the way.

Kyoto remains the cultural center of Japan, and it is in this dignified city that you'll encounter some of the more picturesque scenes of traditional Japanese life: raked temple gardens, carefully contoured temple roofs and mysterious Shinto shrines. Kinkaku-ji Temple, second only to Mt. Fuji as Japan's most famous site, is renowned for its gold-leafed main building which shimmers tranquilly on the surface of its adjacent pond. Glean this vision in the morning and your portfolio will surely shine. 17th century Nijo Castle, with its palaces, moats and gardens, is another sight your lens will delight in as it takes in all the great history and beauty Kyoto has to offer.

You won't want to miss this photography trek to Japan, a country steeped in rich culture and natural beauty that will leave your eyes and lens completely amazed!

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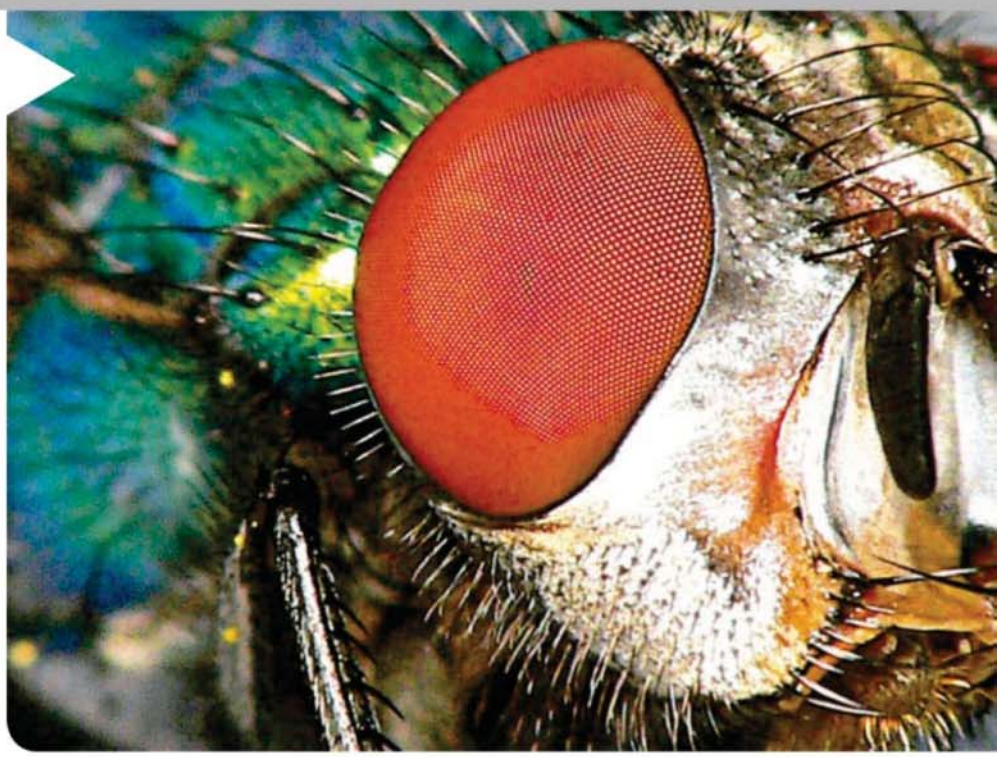

Macro photography is a lot of fun. Everyday subjects—such as this fly—look very different up close. I've taken many interesting close-ups in my backyard using a three-year–old Panasonic Lumix DMC-FZ20. With the lens racked out to maximum zoom, I snap on a Raynox DCR-250 2.5X Super Macro Lens ($60, street) using a Raynox lens holder ($24, street).

I find this much more practical than the usual ultra-close macros. With the Raynox, the maximum magnification occurs with the camera still several inches away from the subject. This way, the subject isn't shaded by the lens, and there's enough room for light to reach it. I can even use the on-camera flash, which I diffuse with a piece of milk-colored plastic.

I photographed this fly at ISO 80, exposing 1/60 sec at f/8. I didn't use a tripod—I just leaned against a tree to steady myself.

Try it, you'll find that the most ordinary things suddenly become very strange and beautiful.

Henk Egbertzen
Nijmegen, The Netherlands

Zoom and gloom

In Tech Support (October 2008), you said that most Canon EOS cameras require at least f/5.6 to focus. I assume this applies to other brands, too. Looking at zooms that go 300mm or more, most are in the f/4–5.6 range. So if you add a teleconverter and lose a stop of light, they become f/5.6 to 8. No autofocus. You could buy a fast zoom if you're willing to refinance your house. Or—here's an idea—you could focus manually. *John H. Gibbons*
Calgary, Alberta, Canada

True. Even those afraid of manual focus should consider teleconverters. After all, subjects typically will be at or near infinity, making the loss of AF inconsequential.

A lucky thief

My Nikon D80 was stolen, and I'm considering replacing it with a Nikon D90, D300, or D700. I'm an amateur photographer, and with the new cameras' high ISO capabilities and stabilized lenses, I'd be tempted to bid good riddance to my tripod. I also value light weight, since I do a lot of photography in the backcountry. I'd think the full-frame FX-format lenses are heavier than DX lenses for APS-C-sized sensors. What's your take?

Paul Rosenberger
Manhattan Beach, CA

There might be 100 ways to respond, but based on three words—"amateur" and "light weight"—we say go with the D90. Especially if cost is a factor. Consider that the full-frame D700 with a 24–120mm f/3.5–5.6G ED-IF VR Nikkor lens weighs 3.3 pounds and sells for $3,260. The D90 has a 1.5X lens factor, yet even with an 18–105mm f/3.5–5.6G ED VR Nikkor (27–180mm, full-frame equivalent), it weighs just 2.33 lb. And at $1,235, we'd say, Paul, that this package is (ouch!) a steal.

Building code

If the owner of a property denies permission to enter it to photograph a structure (such as a barn), what's the legality of photographing it from a public area (such as the shoulder of the road)? *Dave Kaplan*
Brewster, NY

Alan Korn, a Berkeley, CA, attorney who specializes in copyright, trademark, and intellectual property, says no laws prevent your taking photos on public property, except perhaps of military installations or similar government sites. If the structure is visible and can be shot from a public road, the owner does not have a reasonable expectation of privacy or claim for trespassing.

But if you plan to publish the photos commercially, it would be prudent to get a location release. And if the structure bears a mural, ad, or other copyrighted or trademarked material, publication may infringe on those rights as well.

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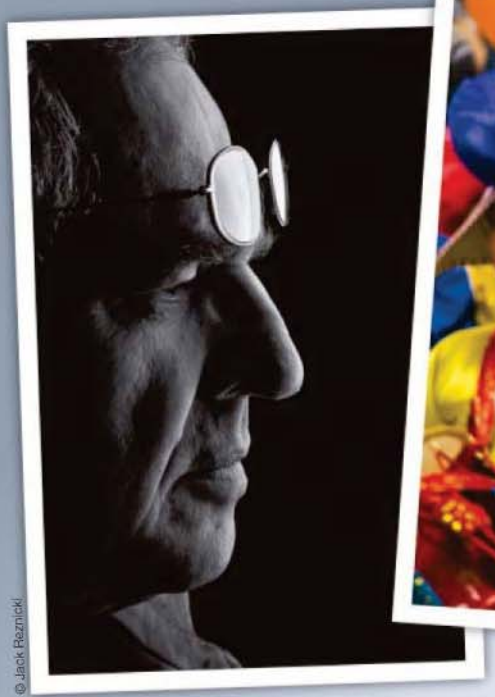

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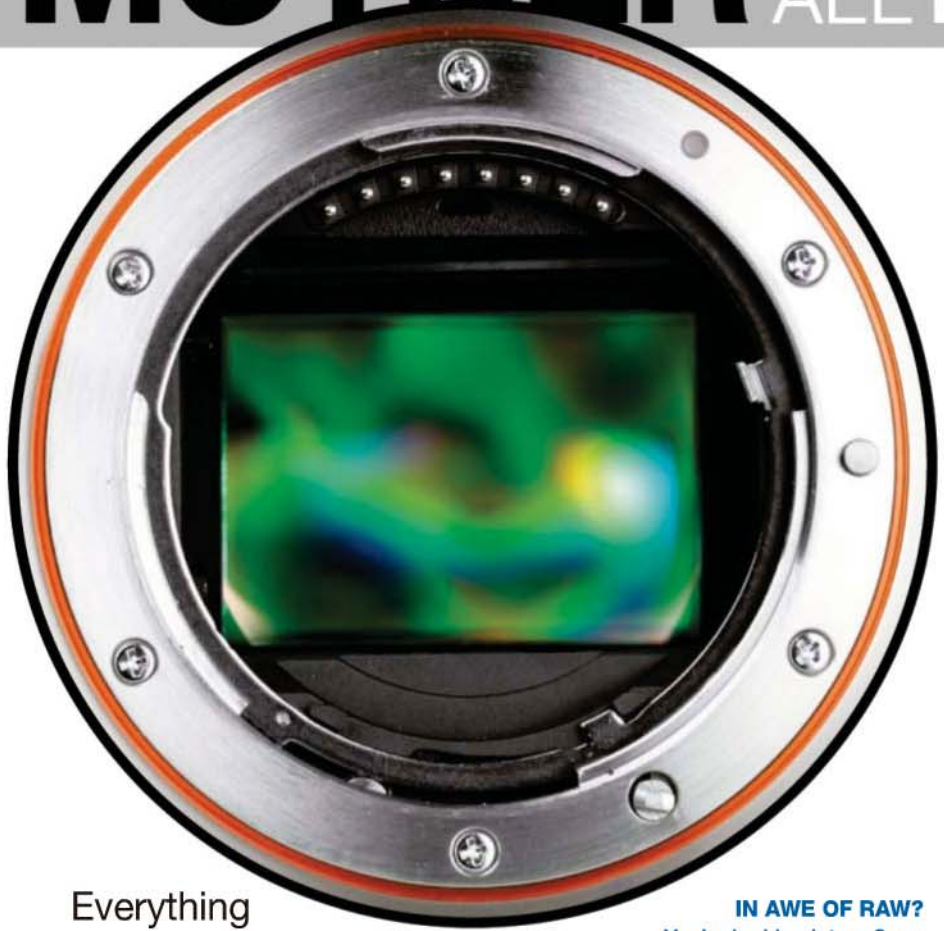
By John Owens

MOTHER OF ALL Data



Everything you need to know...and then some

IN AWE OF RAW? You're looking into a Sony Alpha 900. Want a deep look into how we judge camera specs? Read on.

Despite our geeky white coats, clipboards, and computer-generated reports, the crew in the Pop Photo Lab is a bunch of real-world photographers. We're all about handling, usability, and the practicalities of in-the-field and in-the-studio shooting.

But we know that everything photographic starts with a solid grounding in the technical aspects of the camera, lens, and other equipment. You can't expect any product to perform beyond the capabilities engineered into it. And that's where we come in—finding out precisely what those capabilities are. Forget hype. We're talking the kind of objective assessments that have made the Pop Photo Lab and our Certified Test Results the standard of the industry.

For DSLRs, that means we evaluate resolution, noise, color accuracy, and more. In keeping with our real-world mission, when we test a DSLR we shoot in RAW and evaluate in TIFF.

This means we take the data from the camera and run it through the RAW conversion software that came in the box, applying the manufacturer's standard noise reduction, sharpening, and such. Once converted, the file can begin its life as an image—to be printed, edited, or whatever. It's still a huge file, loaded with data that represents the true capabilities of the camera. Which is, obviously, very useful information when you're shopping.

Would we get different data if we used different software to convert the RAW file? Yes, somewhat. But which software to use, if not the one recommended by the camera maker? There are so many RAW converters to choose from. And would the differences tell you anything significant? Usually not. But as an academic exercise it might be interesting.

The same could be said for evaluating the unconverted RAW data.

It's with this sense of curiosity that I click around www.dxomark.com. Essentially a database of info on RAW files from dozens of cameras, this website gives you a reading of a DSLR's intrinsic capabilities. In other words, it evaluates data straight from the imaging sensor. ISO sensitivity, dynamic range, tonal range, color sensitivity—it's all there, as well as other readings, graphs, tables, comparisons, and various wonderfully techie whiz-bang.

And unlike much of what you see on the web, you can take this information seriously. It comes from France's DxO Labs (www.dxo.com), which supplies sophisticated testing software to the optical industry. In fact, DxO's Analyzer is an integral part of Pop Photo's testing suite, and we swear by it.

We have such faith in DxO's good science that in the months ahead, when you look up a camera test on www.PopPhoto.com, you'll also find a link to www.dxomark.com. This way, you can get our hands-on evaluations of both the camera and the converted RAW file, along with DxO's straight-from-the-sensor data.

Interesting, and an absolute gold mine of lab-coat-worthy geekdom. But what makes DxO do this? Altruism? To advance scientific research? Bolstering its brand? A money-making plan?

Credit some of each.

After all, the company sells a software product called DxO Optics Pro Version 5.3. It is—as you might have guessed—one heck of a RAW converter.

OUR EDITORS' PICKS

Great Expectations

$379, street ■ www.ricoh.com

Photographers have come to expect more than just the ability to point and shoot from Ricoh compacts. The R10 delivers not only 10 megapixels, but an impressive 28–200mm f/3.5–5.2 7.1X optical zoom. "My Settings" mode lets you program what you use most. **HOT:** On-screen electronic level makes sure your images aren't tilted. In-camera editing lets you crop, color-correct, and flag images using the Fn button. **NOT:** No optical or electronic viewfinder, just the 3-inch LCD.

Totally Adaptable

$30, estimated street

■ www.delkin.com

If you have a bunch of SD cards (and chances are you do), there's no reason to scrap them all just because your new DSLR takes only CF cards. Delkin Devices' Secure Digital to CompactFlash Adapter makes it so you can switch quickly among devices that take different types of cards. **HOT:** Keeping all your work on one card, no matter what camera or reader you use. **NOT:** You don't really need it if you don't switch card types—but you knew that already.

Easy Access

$150, estimated street ■ www.tamrac.com

Comfortably carrying your gear is essential, accessing it quickly is even better, and doing both is ideal. With the Aero Speed Pack 85, an upgrade of its popular Aero 80, Tamrac holds fast to that promise. **HOT:** Accommodates a DSLR with lens attached, plus two or three other lenses, and plenty of accessories, as well as a 17-inch laptop. Get to your equipment through side, front, or top compartments that are secured with water-resistant zippers. **NOT:** No tripod holder.

HOW-TO

Print without ink with Polaroid's pocket-sized PoGO. It makes wireless ink-free prints from cell phones and PictBridge digital cameras. The instant-film camera may be dead, but tangible gratification doesn't have to be delayed. ($95, street; www.polaroid.com/pogo/us)

Stop overpacking with Balanzza's Ergo handheld digital luggage scale. If your gear weighs a lot, save yourself extra baggage fees. ($25, direct; www.balanzza.com)

Wear your camera more comfortably, and keep it out of your way, with the Rapid RS-1 R-strap. It sits across your body so your camera rests on your hip. ($44, direct; www.blackrapid.com)

Forego the frame with Metal Mural. You can have your images printed on 6, 9, or 12-inch metal squares, either on a single panel or as a mosaic. ($25–$625, direct; www.metalmural.com)

Be eco-chic with Lowepro's Terraclime series camera pouches and small SLR bags. They're fashionable and made from 95-percent recycled materials. ($20–$80, direct; www.lowepro.com)

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1. Camera Armor ToughStrap & SafeGrip Set $27, street ■ cameraarmor.us

From the folks who make elastomeric silicon camera armor, polycarbonate LCD shields, and other high-tech camera protectors, the ToughStrap Shoulder Strap is a simple but elegant solution to slash-and-grab camera larceny. The strap conceals an embedded stainless steel wire that resists cutting and breaking. It will withstand the strongest tug (up to 3,000 pounds!) before snapping. Its companion, the SafeGrip Hand Strap, can be used in tandem or alone, locking the camera in your hand snugly and securely.

2. Computrace LoJack for Laptops

$40, direct ■ www.lojackforlaptops.com

Installing Computrace LoJack for Laptops increases your chances of recovering your computer if it is stolen or misplaced. Because part of the system must be installed in your laptop when it's manufactured, it will not work with every model, but it is compatible with many popular PC brands, including Dell, Hewlett-Packard, and Toshiba, as well as with Apple MacBooks. When you report your computer missing, the theft-recovery system alerts Computrace LoJack's recovery team to its location. The $60 Premium edition of the system also deletes your sensitive data before it can be misused.

3. Master Lock TSA-approved locks

$7–$12, street ■ www.masterlock.com

Checking your equipment case on a flight? Locking it is a big no-no—unless the lock has been approved by the federal Transportation Security Administration. Master Lock offers several models of combination and key locks that allow TSA screeners, but not baggage handlers, to inspect and relock luggage without damaging the mechanism. A "red alert" indicator appears when the lock has been opened by a TSA screener.

4. Think Tank Airport International V2.0 camera suitcase

$329, street ■ www.thinktankphoto.com

Delayed flights, lack of legroom, and countless other hassles can make flying far from fun. At least this Think Tank bag will ease some of your travel headaches. The international carry-on-sized suitcase has TSA-approved locks (in case you have to check it), a cable to secure it to a fixed object, and space and dividers for several lenses and camera bodies. An optional laptop case and alternate divider set costs $50, street.

5. Zoombak A-GPS Universal Locator

$168, street, plus $15/month service fee ■ www.zoombak.com

Gear gone missing? Using Assisted-GPS and cellular technology, the Zoombak tracks its own whereabouts and reports its location to you for up to five days on a single battery charge. Roughly the size of a bar of hotel soap and weighing about 2.5 ounces, it easily tucks into an empty pocket of your camera bag without being noticed. The included easy-to-use software pinpoints its position on a map-like interface. You can set up "safety zones" so that it warns you when it strays outside certain boundaries, and you can even follow the action on your mobile phone. —*Jon Sienkiewicz*

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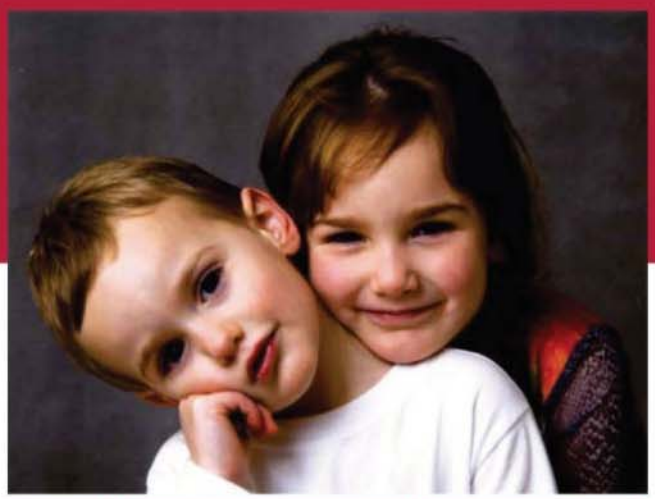

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Grant J., Michigan
2007 NYI Photography Graduate

Portrait by NYI Graduate Fred Kurtz

NYI Graduate Fred Kurtz made this arresting portrait of the kids next door using a digital SLR, just one flood light bounced into an umbrella, and a reflector card in his home studio. *Fred applied the basic lighting and posing techniques he learned in Unit 4 of the NYI Professional Course. As Fred wrote us, "I gave their mother a print of this and she cried. She ordered prints for Christmas presents and two people at work want me to photograph their families after seeing this."*

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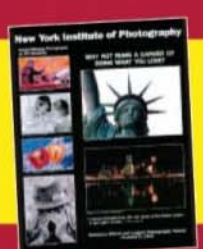

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HAY Hotshot

A PHOTOGRAPHER'S VISION OF THE AMERICAN FARMER

It was love of rock-and-roll that got Paul Mobley excited about photography. As a teenager in Detroit, a friend got him such great seats to shows that he thought it was ridiculous not to try to take pictures. He went for a degree in photography at Detroit's College for Creative Studies, then, more interested in shooting fashion than cars,

PHOTOS BY PAUL MOBLEY; INTERVIEW BY DEBBIE GROSSMAN

THE OUTTAKES: Animals and light make all the difference. Without the cat **(A)**, this shot's just okay. The addition of a furry friend **(B)** helped. But using only reflected light in these photos meant Mobley lost the sky and the saturation he wanted, so he added flash.

he left the Motor City for New York. After a successful (and stressful) career in fashion and advertising, the 46-year-old discovered his favorite subject. See more of his work at www.paulmobleystudio.com.

Q. What are we looking at?

A. His name is Dave Harris and he's from Crane, Montana. This photo is in my new book, *American Farmer* (Welcome Books). Of all the farmers I photographed, he was the one most willing to try anything.

Q. How did you get the animals to pose?

A. While he was sitting there, this cat ran into the picture. Shot number two was better with the cat, but I added a lot of fill light to brighten the picture. I thought, this is pretty good, but I still didn't love the light. When I was adjusting it, in walks this big dog. I said, "Dave, don't move—let's let the animals do their thing."

I kept shooting, and eventually the animals did what I wanted. The animals add such a human element to a big grizzly guy. I never like to call them lucky shots, but sometimes you get lucky with animals. The cat would have been enough, but the dog came in. Would it be as good with the lighting but without the animals? Heck no.

Q. What gear did you use?

A. Off to my left, I used a California Sunbounce reflector in a shiny silver finish, with a portable, battery-powered Lumedyne 200-watt-second strobe fired into the center of it. Since I'm giving away all my secrets, I'll tell you this: Whenever I'm on location, I take a white sheet and set it in front of me—that's right in front of his feet. It helps reflect the sky into his face and cleans the picture up.

Q. Was the strobe really necessary?

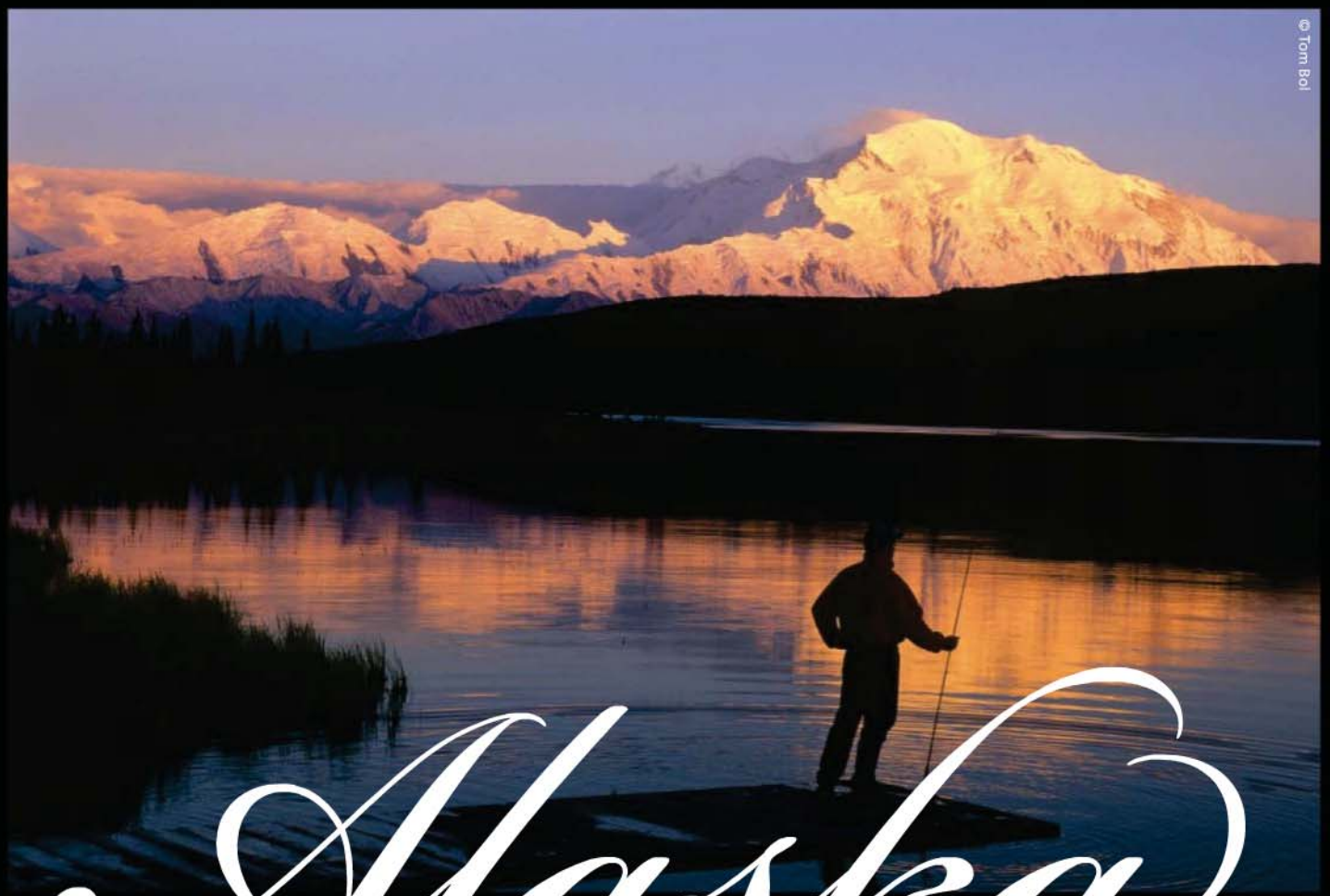
A. I could have shot the photograph with natural light. But for my look, I like crisp, vibrant color and saturation—that day, I wasn't going to get it without flash. By making the flash your primary light source, you can control the sky. Because the flash was stronger than the ambient light, the sky went blue.

Q. What camera did you shoot with?

A. This is a Canon EOS 5D with a 24–105mm f/4 Canon EF-IS lens, set at about 24mm.

I shot this image in RAW, which I always do. I normally go in and sharpen the picture a little, and saturate the color to what I think is believable. When it goes too far, I pull back. I'll burn the corners down a little bit, but I still try to keep the mindset of the darkroom.

This project really taught me to find the love in my subject and not be so concerned about the technical. I've missed too many photos in my lifetime by worrying about the light.



Alaska

July 11 – 18, 2009

The Mentor Series is headed north to Alaska, a land of majestic mountains, sparkling glaciers and incredible wildlife to wow your senses and expand your portfolio. Traverse the vast grandeur of this state alongside professional photographers Layne Kennedy and Bill Durrence who will guide you in finding the best shots and using the best techniques possible to capture this remarkable locale.

Your trek begins in Fairbanks, Alaska's second largest city located in the heart of the state's interior. Follow the log-cabin-lined city streets and discover the colorful, hospitable locals who add warmth to the chilly air. Travel on next to nearby Denali National Park, an expansive subarctic wilderness with Mount McKinley as its centerpiece. This peak is the highest in all of North America—an overwhelming sight to behold and one you'll be anxious to fill your frame with. Soaring to an astounding 20,320 feet (nearly 4 miles high), Mount McKinley truly embodies what landscape photographers' dreams are made of, and you'll have ample time to photograph this natural wonder and its surrounding Kantishna region.

No place provides a better mixture of Alaska's modernity and its natural beauty than Anchorage, its largest city. Encircled by six mountain ranges and kept seasonable by a maritime climate, Anchorage is active year-round with festivals, recreation and adventure—your camera will always have something lively to zero in on in this urban landscape. Kenai Fjords National Park is another sight you won't want to miss. Here your lens will encounter awe-inspiring glaciers and fjords as well as an array of wildlife. The marquee attraction of the Park may be Exit Glacier, a 3-mile expanse of undulating ice which will offer a host of fantastic photo ops, whether serving as the backdrop to a landscape or the intimate subject of a close-up shot. Journey on to the city of Seward and visit Alaska's only public aquarium and "window to the sea", the Sea Life Center, where a medley of marine life awaits your discerning lens.

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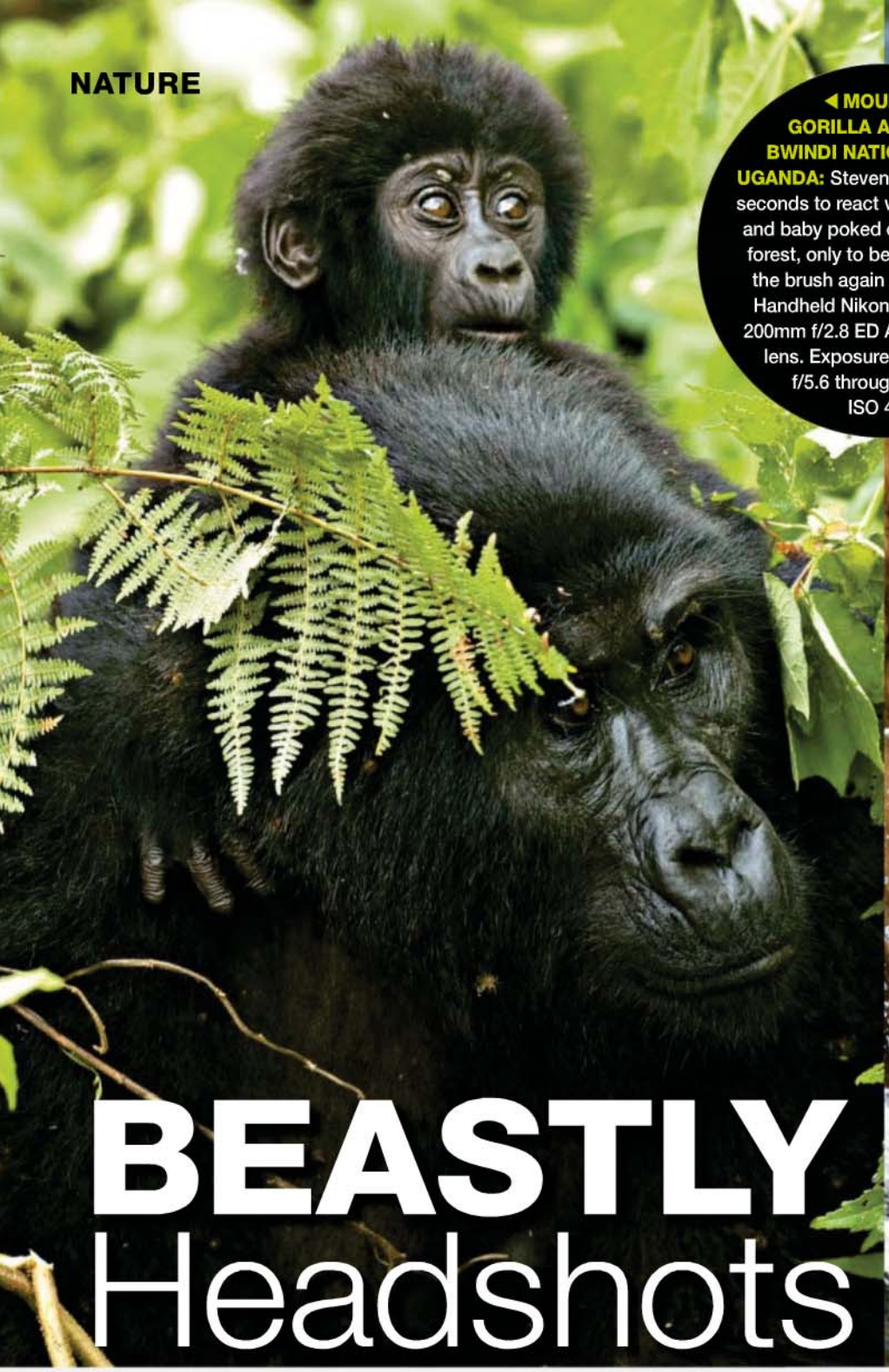


◀ **MOUNTAIN GORILLA AND BABY, BWINDI NATIONAL PARK, UGANDA:** Steven Morello had just seconds to react when this mother and baby poked out of the dense forest, only to be hidden back in the brush again moments later. Handheld Nikon D200 with 80–200mm f/2.8 ED AF Zoom-Nikkor lens. Exposure, 1/180 sec at f/5.6 through UV filter, ISO 400.

BEASTLY Headshots

Capturing wildlife headshots—tight close-up portraits—may seem easy at first glance: Just get as close as possible with a big telephoto lens and take the picture.

That certainly works, if all you're hoping for is a simple snapshot. But to ensure that you get a powerful and inspiring image, a little more effort is involved.

Here are six essential tips to help you get an image with more impact.

Know your subject—and your gear

Before you set out to photograph wildlife anywhere, whether simply in a nearby park or on a major photo trek abroad, using your camera should be second nature. Know how to change settings without having to stop and look—this can make the difference between an image captured and an image lost.

The photo of mountain gorillas (above) is a case in point. These animals live high in the mountains in Uganda's impenetrable forest. Getting to them often requires a long and difficult trek in very

and photos by Steven Morello

Close-up portraits of animals take more than a long lens

hot, humid, and sometimes rainy conditions. Once you find the gorillas, you'll have only one hour to spend with them. These primates move about as they wish, in and out of the dense bush, under constantly changing light. So, to photograph them, you need to travel as light as possible, and to be able to work fast in difficult conditions.

Find the right light

Photographically speaking, there is nothing better than good light, and the best is at sunrise and sunset. When the sun is low on the horizon, it creates long shadows, brings out texture, and casts a warm glow.

Of course, when you're dealing with wildlife, you can't always predict when your subjects will show up. When lighting is not optimal, I often use fill flash to bring up shadow detail or add catchlights to an animal's eyes. Note, though, that the use of flash is prohibited in some national parks—and even if it isn't, it may unduly disturb animals. Check the local regulations, and always use discretion.

Choose the right lens

Tight headshots mean long telephoto lenses. If you are photographing in a zoo or in a place where wildlife is close and tolerant (like the Galapagos Islands), a 300mm lens is often sufficient.

For most situations, however, a 500mm lens or longer is the standard. The long lens will isolate your subject and let you focus in on the expression of the animal.

Also get the fastest lens you can afford, so that you can work in low light or less then ideal conditions. Teleconverters are an inexpensive way to increase the focal length of your lens, but these will also dim your image—you lose a stop of light with a 1.4X converter, and 2 stops with a 2X.

Digital SLRs with sensors that are smaller than full-frame provide a real plus for wildlife photographers. With their lens factors, these cameras add to the focal length of your lens by essentially cropping the image recorded on the sensor. For instance, my 500mm f/4 lens becomes the equivalent of a 750mm f/4 when it's mounted on my Nikon D300, with its 1.5X lens factor.

This combination of reach and speed was critical for photographing the walrus in Spitsbergen (on the next page). Because of high winds and low light, I had to shoot at f/4 to get as fast a shutter speed as possible. With a 500mm lens, I had very little depth of field, so focusing precisely on the eye was critical. That's why I make about 80 percent of my images in manual focus.

For exposure, though, I always keep my cameras on aperture priority. Whenever possible I like to control my depth of field, which is especially important when using long lenses for animal portraits. As magnification increases, depth of field decreases, given the same aperture. This helps in blurring out a distracting background in an animal headshot, but you don't want a depth of field so shallow that you lose important detail in the animal's face. If your camera has a depth-of-field preview, use it—and pay attention to your focus point.

◀ **BROWN BEAR, BROOKS FALLS, KATMAI NATIONAL PARK, AK:** You can tell Morello was photographing for the magazine market—he waited to get the bear, fish, and river all in one image. Nikon D200 with a 500mm f/4D ED-IF AF-S Nikkor lens on a tripod. Exposure, f/8 at 1/250 sec, ISO 200.

Check the histogram

For me, the biggest advantage of digital photography is the ability to check your exposure in the field. This does *not* mean chimping the camera's LCD monitor. Even with high-end cameras, small nuances of exposure are lost on the screens, and they are hard to see in direct light. Instead, use the histogram.

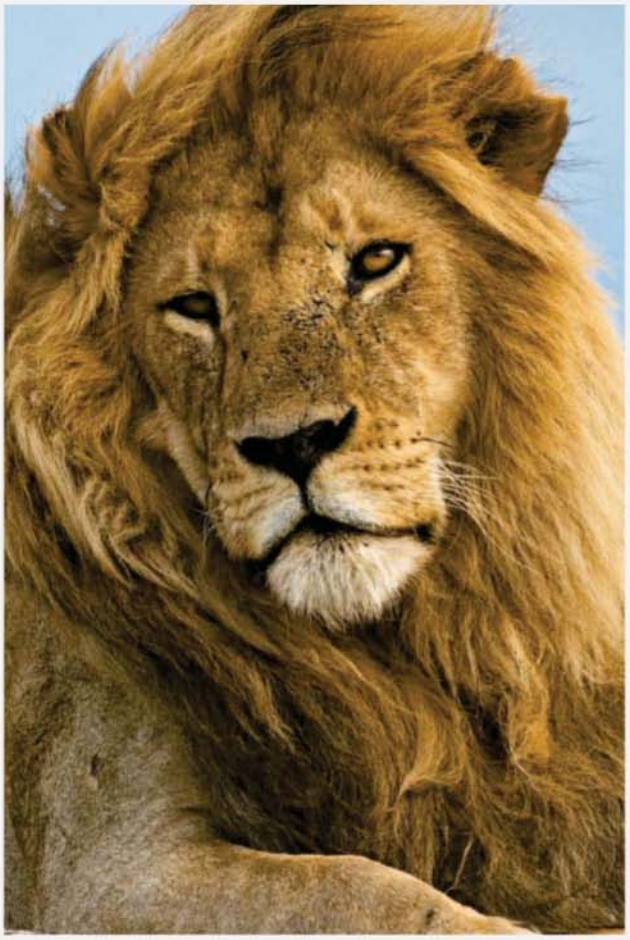
Reading a histogram is easy—it's all about the ends of the scale, not those peaks and valleys in the middle. Don't cut off the end of the scale on either the left or the right.

If you cut off the left-hand side of the scale, you'll have an underexposed image, with no detail in the shadows. In this case increase your exposure until the scale appears more centered.

If you cut off the right-hand side, your image will be overexposed, with washed-out highlights. To compensate, decrease your exposure.

The image of a lion on the Serengeti in Tanzania (on the next page) is informative. You would think that the lion's face was as close to neutral gray as you could get. But after checking my histogram, I saw that it was too far to the left and that I was losing shadow detail. I

WALRUS, SPITSBERGEN, NORWAY: When walrus haul out on top of each other, it's hard to tell where one ends and the others begin. Morello used a supertele to isolate individuals from the group. Tripod-mounted Nikon D300 with 500mm f/4D ED-IF AF-S Nikkor lens. Exposure, 1/60 sec at f/4, ISO 200.



MALE LION, SERENGETI NATIONAL PARK, TANZANIA: After checking the histogram, Morello decided to increase the exposure by +0.3 EV, which opened up the lion's face. Nikon D200 with 500mm f/4D ED-IF AF-S Nikkor lens on a beanbag atop a safari vehicle. Exposure, 1/90 sec at f/8, ISO 200.

compensated by +0.3 EV and got the proper exposure.

Sweat the details

Get close for a reason—highlight the details that might otherwise be lost in a wider shot. The image of the bear (previous page) at Brooks Falls, AK, is a case in point. The salmon in its mouth was moving back and forth—sometimes pointing backwards, and sometimes forwards.

I waited to release the shutter at the moment it was nearly perpendicular to the bear's head, so you could see the fish as well as the bear. I don't believe in holding my finger on the shutter release and letting the camera fire away in a burst, hoping for a good shot.

Brooks River combines dark water with white water, making for a tricky exposure. In such cases, an image may require fine-tuning in an image-editing program after the shoot.

For this reason, I always shoot in RAW and not JPEG. With JPEGs, your camera makes adjustments to your image and then compresses the file. Sure, this saves space on your memory card, but you lose some of the original image information. This limits the adjustments you can make in postprocessing. While shooting RAW gives you a much bigger image file, you have much more leeway for adjustments later.

Add life

One of the biggest obstacles in wildlife photography is bringing life to a still image—it's especially challenging when you are making a tight headshot. It's the small things that show life in your subject—the catchlight in the eye, the forward cocking of the ears, even little drops of drool on the chin.

Once, when I was photographing a hyena, it was watching for an opportunity to feed on a carcass of a lion kill. It focused on the kill and not on me—doing what this animal normally does in the wild, not what it does when a person is interfering.

Steven Morello's work has appeared in National Geographic *magazine and books, as well as* The New York Times. *His recent book,* The Traveling Nature Photographer: A Guide for Exploring the Natural World Through Photography, *is available in paperback from Schiffer Publishing. Check out his photo tours at www.greenplanetexpeditions.com.*

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THE EVERGLADES

Miami is famous for wild nightlife, but daytime is for wildlife photography. Glades of cypress and marshland filled with orchids, alligators and egrets wait off the Tamiami Trail, a stretch of U.S. 41 that in an hour takes you straight from Miami to the wild beauty of the Everglades. January's dry season promises clear blue skies and temperate climate. Follow this route down the Tamiami for a day of amazing photos:

1 Shark Valley. Your first stop in the Everglades yields fields of sawgrass, plenty of egrets and ibis, and, of course, alligators. These "living fossils," with their craggy skin, make great subjects for black-and-white shots. Park rangers say that they aren't aggressive or likely to bother you as they lounge on the roadside, as long as you keep a 15-foot distance. Too close for comfort? Take a 2-hour tram tour (www.sharkvalleytramtours.com), which guides you safely past the beasts to a 65-foot observation tower for a bird's-eye view of waterfowl and gators below.

2 Airboat tour. Numerous and easy to spot from the road, these floating buggy rides through the swamps and marshes are perfect for close-ups of wildlife, as well as landscapes such as the one above, which Allen Maestas captured on the Miccosukee Tribe airboat tour at Miccosukee Indian Village (www.miccosukeetribe.com), just past Shark Valley. Bring a polarizer to cut down on the glassy reflections from the water.

3 Swamp walk. En route to Big Cypress National Park, pull off at Clyde Butcher's gallery (52388 Tamiami Trail; clydebutcher.com). Known as the "Ansel Adams of the Everglades," this photographer displays large-format images that will inspire you. Then follow the Tamiami to Oasis Visitor's Center (239-695-1201), where you can take a free scenic swamp walk, if you book in advance during the (surprisingly cool) dry season. This takes you deep into twisted mangroves, hanging moss, wild orchids, and carnivorous bladderwort. It can also sometimes take you through water a few feet deep—so wear something grubby, bring a change of clothes and pack your gear in waterproof plastic. Use long exposures to blur the water and for contrast with the plant life.

4 Kirby Storter Boardwalk. Big Cypress National Park is filled with "cypress domes," depressions filled with stands of bald and palm cypress. On Kirby Storter Boardwalk, 7 miles west of Oasis, you can shoot one without getting your feet wet. Trees tower above as you stroll past ferns and orchids. Aim your tele upward to capture bromeliad in the highest branches.

As the day ends, finish off your wet-and-wild road trip by turning left on State Road 29, which takes you right into Everglades City. Feast like a king for less-than-Miami prices on the seasonal stone crab, and cap off your photo adventure with sunset shots over the Chokoloskee Bay.

ALLEN MAESTAS

For more on visiting the Florida Everglades, go to www.nps.gov/ever.

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© Daniel Greenwood

"I have been visiting Manhattan for almost 25 years and I can honestly say the stimulation of being part of this event, the visions Mpix gave us and the opportunity to experience that day on the boat, brought my passion for the art of photography to a new level." — ***Daniel Greenwood***

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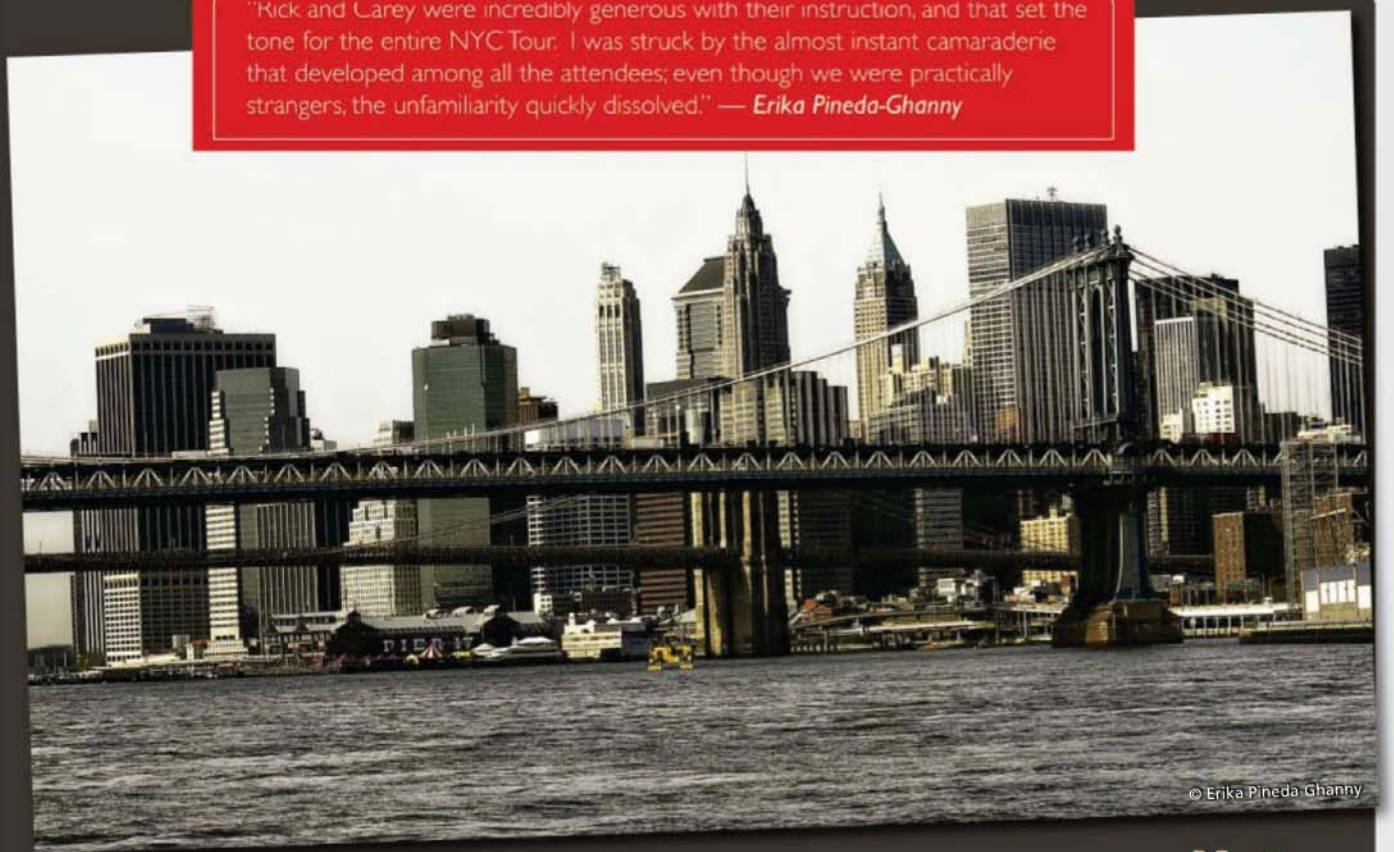
"Rick and Carey were incredibly generous with their instruction, and that set the tone for the entire NYC Tour. I was struck by the almost instant camaraderie that developed among all the attendees; even though we were practically strangers, the unfamiliarity quickly dissolved." — ***Erika Pineda-Ghanny***



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By Debbie Grossman
& Dan Richards

Strange color

Crop

Before▲
After▶

BLUR BALLET
Clayton Ravsten
Camas, WA

The problem: Photographer Clayton Ravsten was shooting his granddaughter's dance recital, at which flash was not allowed. So he used the time-honored technique of using a shutter speed slow enough to create an impressionistic blur (think Degas). We believe the technique succeeded quite well, but—*ow!*—that color. It looks as though the automatic white balance overcompensated with too much yellow. The resulting color scheme is way too primary for this subject.

What now: We used Adobe Photoshop CS3's Curves to manipulate individual color channels. We subtracted yellow and added green (which has the effect of subtracting magenta). We found that the background color was still distracting, so we lowered its saturation in a separate adjustment layer. While we were at it, we leveled the horizon and cropped a bit off the bottom. We were trying for a light, pastel effect that would complement the subject.

Next time: A white balance preset (namely Tungsten) would have worked better than using Auto WB. An alternative: Shoot in RAW, which gives you plenty of leeway to adjust color after the fact. (The camera Ravsten used doesn't allow RAW capture, unfortunately.)

Tech info: Canon PowerShot S5 IS, 0.4 sec at f/3.5 in Program mode, ISO 200. Minor cleanup in Adobe Photoshop Elements 4.

POOL PARTY
Adam Berent
Toronto, ON, Canada

The problem: We like the surreality of this perfectly symmetrical, frame-within-a-frame picture—it could almost be a photorealistic painting. The long exposure combines the eerie stillness of the water and foreground plants with the dreamy blur in the palm trees. That's why we wanted to see more exposure in the background: To bring out the blur, and add more pop.

What now: As photographer Adam Berent had shot in RAW, we processed two TIFFs from the same file, one for the highlights and the other for the shadows. We then combined these elements in Photoshop—making a kind of high-dynamic-range (HDR) photo—and did a little color correction, too. We noticed that the columns bowed out due to barrel distortion (the lens' fault, not Berent's!), so we straightened them using Photoshop's Lens Correction filter.

Next time: This isn't so much a fix as an alternative interpretation. We wanted a weird dreamy quality, whereas the photographer had something a little more realistic in mind. This is what makes photography fun—there's always room to play.

Tech info: Canon EOS Digital Rebel XT with 17–85mm f/4–5.6 Canon EF-S IS lens, 30 sec at f/8, ISO 100.

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Photo Anatomy

Why It Works

■**Fundamentals:** Multiple curves and diagonals, use of monochrome, deep perspective.

■**Curves and diagonals:** The shoreline curve joins up with the landmass in the background to form a near S-curve. The streaks in the clouds add to the dynamism.

■**Monochrome:** After converting it from a RAW file to a b&w TIFF, photographer Guy Tal also toned it in Adobe Photoshop CS2 for a selenium effect. It makes for a brooding quality (and retro look) that you wouldn't get in a straight color rendition.

■**Deep perspective:** By shooting a vertical, Tal was able to include snow and salt virtually at his feet, to further the sensation of depth.

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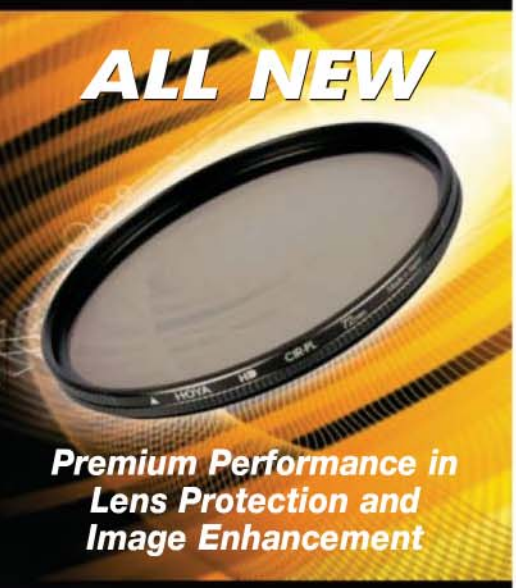

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PICTURE DOCTOR

7 Reasons to Go Vertical

When should you shoot a vertical? Whenever you shoot a horizontal. Seriously, many photographers overlook the advantages of the vertical shot, which are many.

■**Portraits:** Verticals aren't called "portrait orientation" for nothing. The 3:2 aspect ratio of most film and digital SLRs closely matches the proportions of the human face. The best way to avoid a distracting background is to leave it out to begin with, so turn that camera sideways and fill the frame with the face.

■**Deep space:** Verticals let you get a wider angle of view with the same focal length, as they can take in low foreground detail without losing the background **(A)**. For another example, see Guy Tal's scenic on the previous page.

■**Reflections:** For those puddle/pond reflections, go vertical. This will let you take in more of the skyscraper or the mountain. Try framing nothing but the puddle reflection.

■**Dynamic space:** The vertical (standing) format is inherently more dynamic than the horizontal (reclining) format. If the picture looks flat and lackluster, add a jolt with a vertical. Curves and lines moving through the frame help here **(B)**.

■**Neater stitches:** If your widest-angle lens isn't wide enough to capture your subject, and you decide to stitch, verticals attached along their long side give you a more manageable final image shape (a conventional rectangle) than merged horizontals, which become unwieldy long ribbons.

■**It's only natural:** Some things are by their nature verticals—skyscrapers, redwoods, statues, giraffes **(C)**. You'd be surprised how many people forget this.

■**Defy expectations:** Take verticals just for the heck of it, even if you know it *should* be a horizontal. Look for an interesting crop of the big horizontal scene. You never know.

What's that for?

The function (or custom) button: Many DSLRs have a button you can program to perform a single function, such as autofocus lock, depth-of-field preview, ISO, white balance, flash-exposure compensation, drive mode, or dynamic-range control. You program it through the menus, usually the setup folder. **What to set it for?** Use your camera a lot, and see which control drives you batty from having to rummage through a menu or a jam-packed control panel to get to it. *That's* the one to assign to the button. **Buttoned down:** Several Sony Alpha models, such as the A700, shown here, sport both a function button (which accesses lots of controls) and a custom button (which accesses the one control of your choice).

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TO FIND OUT HOW THIS WAS DONE...JUST TURN THE PAGE ↻

B.Y.O. LIGHTING: The best approach to shooting clubs, says Erik Seo, is to bring your own off-camera strobes. The two main lights here: Seo's balcony-mounted AlienBees 1600s, fired with PocketWizard Plus 2 radio triggers. Sepia-like tone created with an extreme white balance shift in Adobe Camera Raw.

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YOU CAN DO IT Text and photos by Erik Seo

LIVEView

Shooting a rock club can be totally awesome

Are you ready to rock?

At concerts, the raw excitement often inspires an audience to pull out their camera phones and snap away. Concert pictures that really seem *in the house*, though, are far from snapshots. As the house photographer for Club Harry O's in Park City, UT, I know.

Your highest hurdle: lighting. The color, intensity, and direction of stage lights change during every number. Worse, clubs can be hopelessly dim. Some nights, dialing in 1/60 sec, f/1.8, and ISO 3200 still leaves you 2 stops underexposed.

The best solution? Off-camera flash. Hanging radio-triggered strobe units in clubs can be easy—they often have balconies, exposed rafters, and light towers for just that purpose.

Not an option? Have a friend hold a wireless flash from the floor or balcony. You can buy radio flash triggers inexpensively online.

The trick to strobes is making their output seem part of the overall lighting design. This means aiming them indirectly and warming them up a bit with gels. Don't light the band from the front, and definitely not with an on-camera flash. If you're working with two or more lights, vary the ratio so one is dominant—that will add depth.

When stage lighting brightens, I turn off the strobes and use the available light. A high ISO and shutter speeds of 1/125 sec or faster will work.

At slower speeds, I "spray and pray"—machine-gunning hundreds of shots, while hoping a few will work. Another ambient strategy: Paying close attention, and tripping the shutter when the subject is keeping relatively still.

A few more tips:

- **CAPTURE IMAGES IN RAW,** not JPEG, to give yourself the leeway to fix color and density in postproduction.
- **COMPOSE FOR THE AUDIENCE,** stage, and hall, as well as for the band. An active crowd and colorful stage set can add energy that typical band-only shots lack.
- **SELECT CAMERA ANGLES** so stage lights stand out against dark or contrasting backgrounds.
- **START PHOTOGRAPHING** in smaller clubs and get to know the managers, security people, and lighting directors. Their cooperation is vital for you to take photos that really rock.

LIGHT MUSIC: This shot of singer John Legend gets added dimension, thanks to two AlienBees 1600 strobes (main to his right; fill, left) set to different power levels.

A Lighting System That's Out of This World

Photography is all about problem solving, and the more tools that you have at your disposal, the more problems you will be able to solve efficiently. That is the premise behind the Calumet Travelite flash system. This comprehensive lighting system begins with two self-contained monolights, a 375w/s unit and a 750w/s unit.

What makes the Travelite system so special is its vast selection of dedicated accessories. Whether you're shooting portraits or products, you'll appreciate the range of reflectors that allow you to go from high-key to super-soft in one simple motion. Changing the angle and direction of light is equally easy with a variety of grids, snoots and barn doors. These light modifiers are also compatible with Calumet studio flash systems and Bowens flash systems. For unlimited flash possibilities, a rechargeable Travel-Pak is available that allows up to 300 full-power flashes from a single charge.

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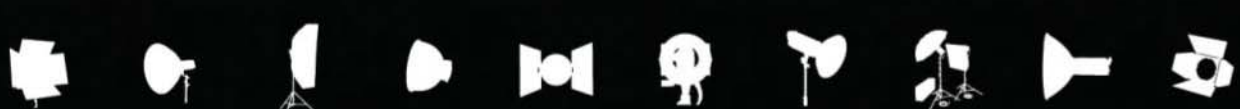

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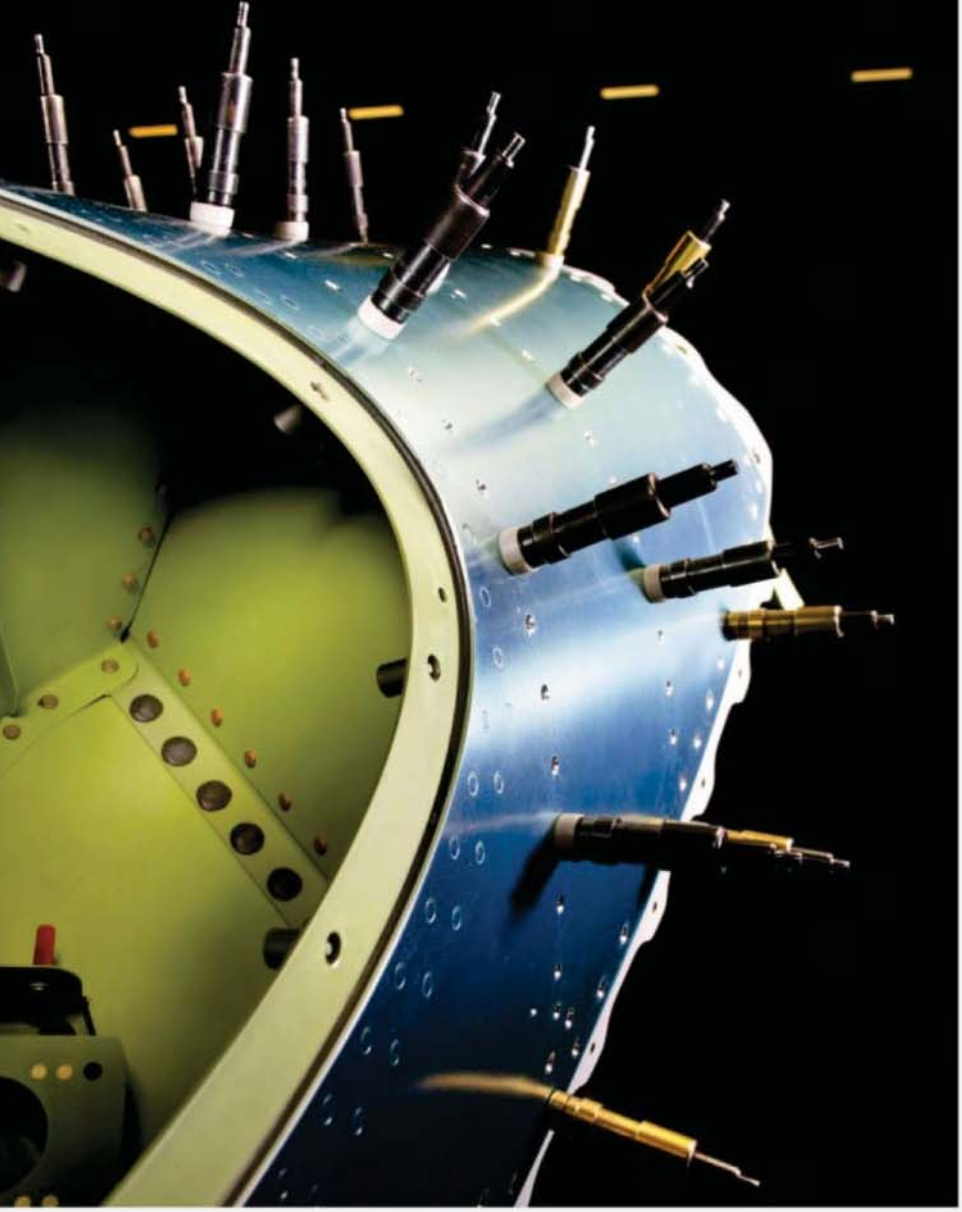


AIRCRAFT

Lighting turns spare parts into rare art

Aerospace engineers rarely prize form over function, but the photographer who shoots Boeing's corporate annual reports sure captures the beauty in their designs. "What I love about aerospace is that the end product is so sculptural and graphic, like shooting pieces of art," says Seattle-based Jeff Corwin (www.jeffcorwinphotography.com). "The components have great textures and surfaces, and it's fun to play with colors on the metal."

He uses an old Hasselblad Flexbody medium-format camera with a Phase One digital back for his still-lifes. But you can use a DSLR to similar effect. The trick is in the lighting—and while he brings his studio lighting gear to the factory, you can substitute off-camera flashes and accessories.

Here are Corwin's tips on how to turn an industrial object into an *objet d'art*.

1 Go wide for depth. Corwin wanted everything from the front of this unfinished 4-foot-high aircraft part to the ceiling lights to be in focus. So he used a small aperture (not recorded in the file data) on his Hasselblad 40mm lens (equivalent to about 26mm on a full-frame DSLR). Wide-angle lenses give you a greater depth of field than teles at a given aperture and distance.

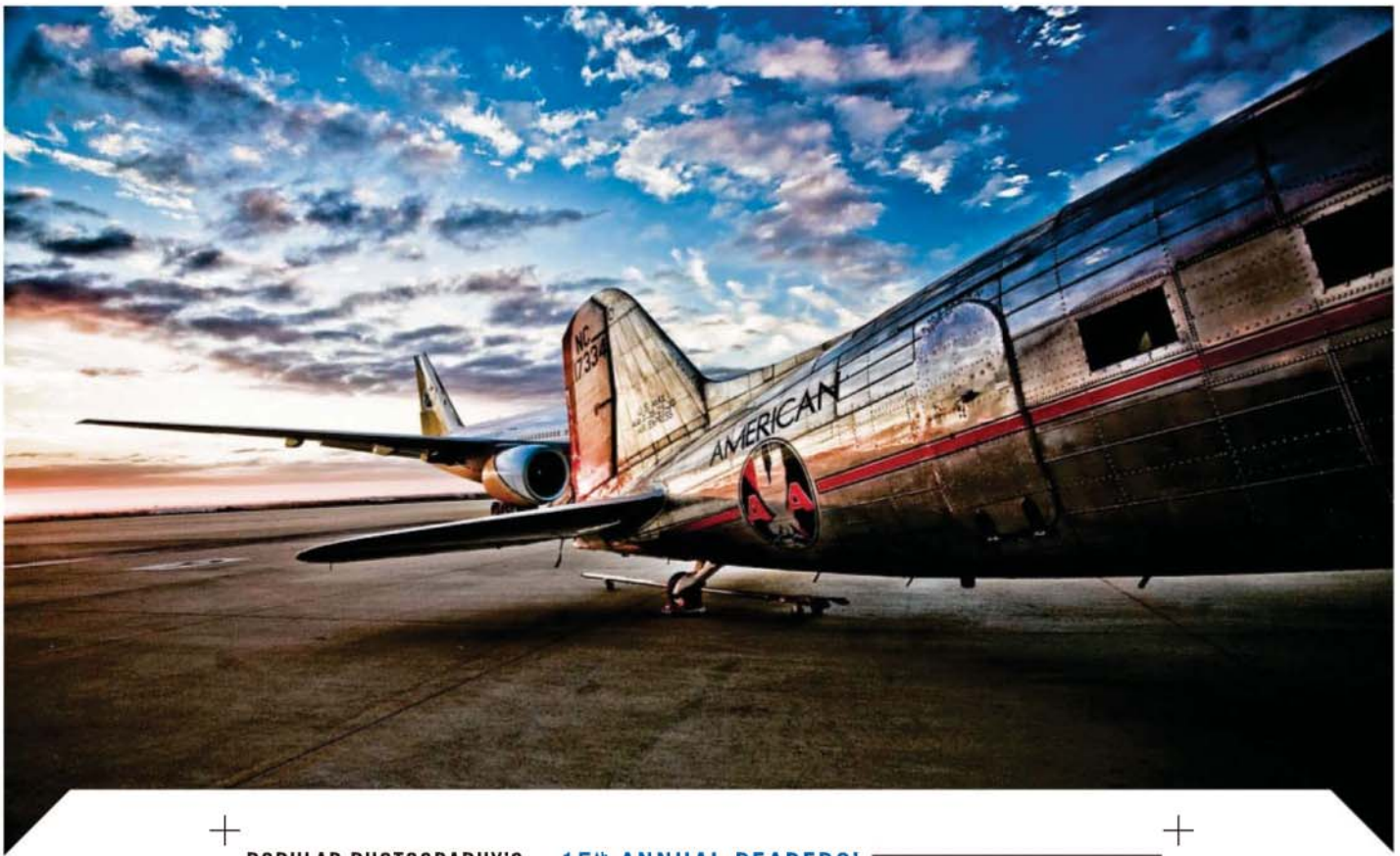
TIPS FROM A PRO

Text by Laurence Chen
Photo by Jeff Corwin

2 Knock the ambient light down; light the subject up. Factories are messy, chaotic places—Corwin found his subject on a workbench with other pieces scattered about. But it was easy for him to imagine a composition involving the shape of the part against a black background. "I gravitate towards simple shapes and find a way to eliminate all the things around it," he says. When you're using deep focus, clean up the visual clutter by underexposing the surroundings. Here, exposure was 1/500 sec at ISO 100, too little to capture any of the background except for the ceiling lights. He lit the subject with strobes.

3 Light across surfaces. Corwin aimed a light at a low angle across the subject to reveal the metal's texture and shape. He positioned the light above and to the right of the camera to cast shadows back towards the viewer. (Beware of lens flare when aiming light this way.) A grid spot kept the light off the messy workbench. Although he uses Profoto 2400-watt-second Pro-7 power generators and strobes, you can use wireless speedlights instead—narrow the beam by zooming the flash head to telephoto, or (better) attach a grid spot. Then, to keep the highlights bright, dial up the flash output to +1 to +2 EV in automatic mode or set the power manually. Test shots help determine the correct flash output and light falloff, focus, and depth of field. Any light you add may increase the overall exposure, so be careful not to blow out highlights.

4 Fill in shadows. Two more lights complete the photograph—another grid spot aimed inside the component (at center-left) and a large softbox above and slightly right of the entire object. Again, test shots will help you determine the output. Corwin set the power of the left-hand spot about 1 EV less than the first one, and he brought the softbox's power up just enough to even out the illumination along the curving edge. While he didn't use colored gels for this image, when he does, he likes to play warm tones against cool, avoiding strong, saturated colors.



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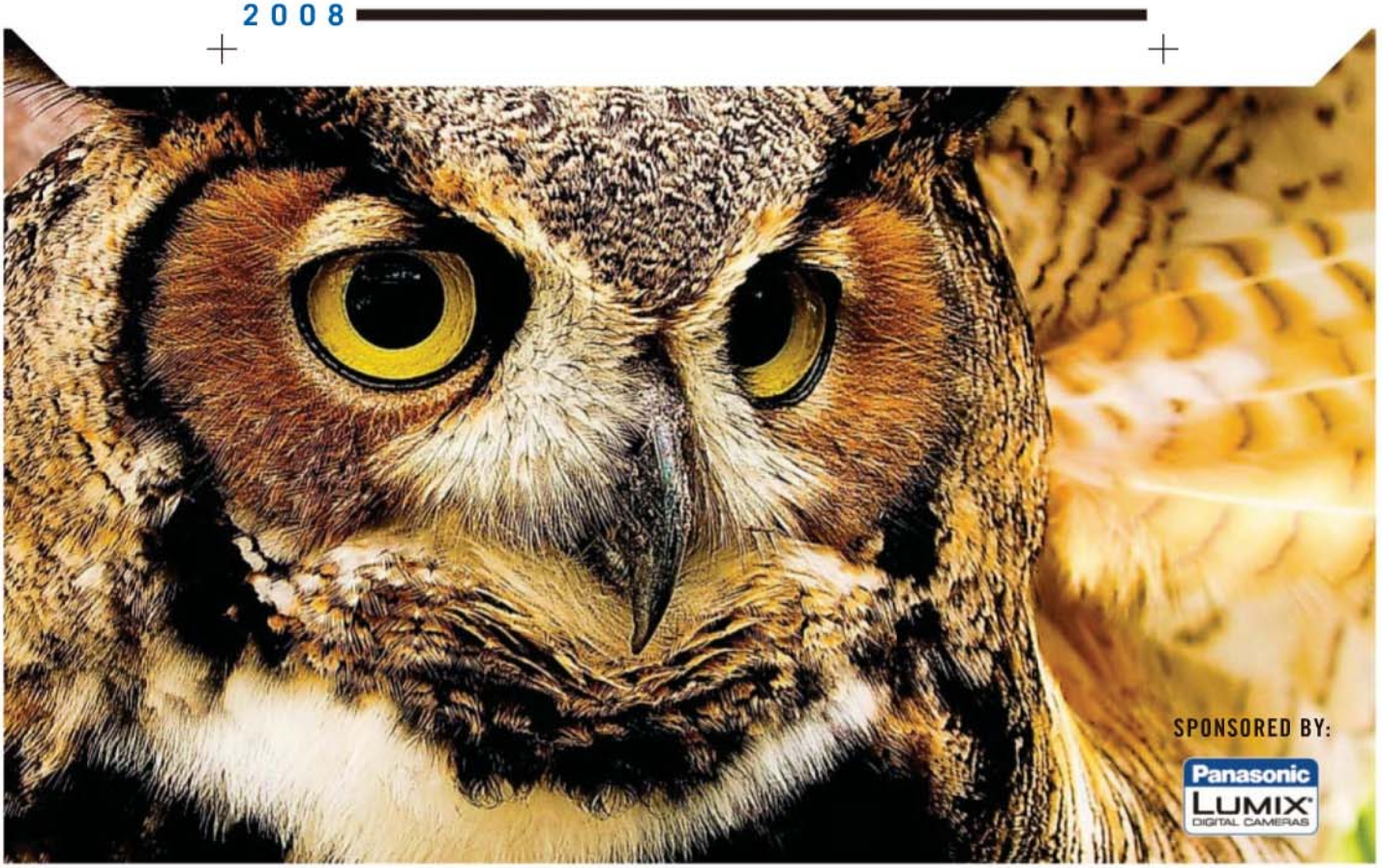
2008



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GRAND PRIZE WINNER:
Alex Braverman
Fort Worth, TX

These days, you'd be hard-pressed to catch Alex Braverman without his camera. By his own estimate, he spends about 12 hours most days on photography, which leaves just a few hours for sleeping, eating, and taking care of all of the other business of being human. But this is a recent phenomenon. Just four years ago, Alex was an entrepreneur with a background in mathematics and computer science. And while he was very successful, a part of him never forgot how he had felt as an 8-year-old boy in Lithuania when he held his first camera. "It was old and dirty, but I loved it," he says of the gift from his grandmother. He even made the bathroom into his darkroom. "I remembered the feeling of taking something out of real life and putting it into 'paper life,'" he adds. And, luckily, the path of our passions often runs circular. "I had the opportunity to pursue photography full-time," says Alex, who has since graduated from New York Institute of Photography and taken three *Popular Photography* Mentor Series workshops, "and now that's all I do, day and night. Photography is my life."

This is why he traveled from his home in Fort Worth, Texas to New York City last July to attend another photo workshop. Arriving a day early to get in what he likes to call "photo hunting," Alex was able to capture a couple hundred images as he walked the city's streets, including this one. "Shooting with a fish-eye makes it all so self-contained," he begins. "It says 'This is the world—nothing else exists.'"

Nevertheless, Alex is not interested in portraying the real world in his photography. "I consider myself an artist, not a craftsman. It's not my job to convey life as it is but to create something beautiful that you can put on the wall and admire," he says. He believes that by allowing himself to be "totally fearless" in his art, he is best able to express himself. And he gives this advice to novice photographers, "Figure out what you want to say. Otherwise, it's just a snapshot." To view more of Alex's work, visit *www.michelangelo-project.com.*

WINNER:
Danny Podkowa
Portland, OR

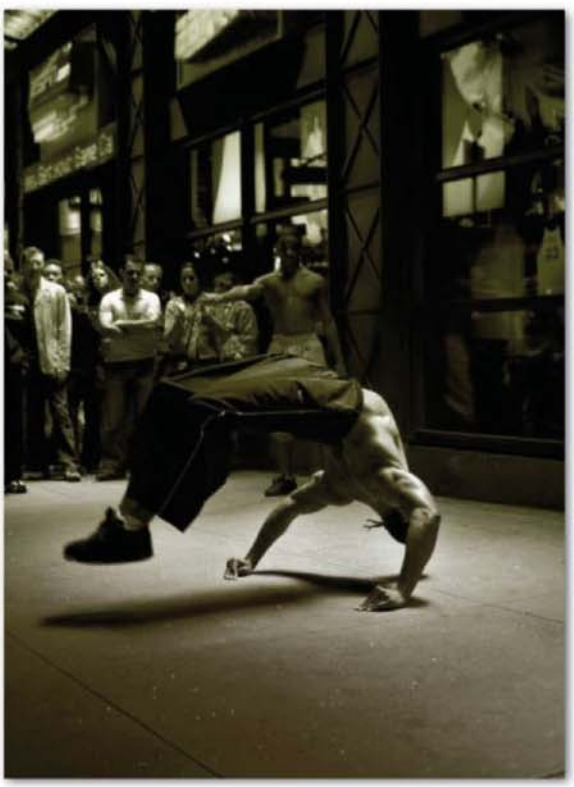
Pod (Danny Podkowa) has a singular passion: skateboarding. If he's not skateboarding, he's thinking about skateboarding. Perhaps the only thing that rivals this first love is photography. "I live and breathe skating," Pod says, who has been active in the sport since 1985, "and I shoot it as often as I can. I guess it comes easier to me than most folks, because I know when the climax of a trick is going to be."

Pod says that he always thought that skateboarding would be cool to shoot, but it wasn't until he was in college that he seriously picked up a camera. "I had to make a slide show for an art class, so I borrowed my dad's camera, a Minolta x-700—and kinda never gave it back," he recalls with a laugh. Since then he's found a way to juggle his full-time job as an offset printer, teach himself photography, and continue to board, even combining them all into a free zine called *Sauce*, which he publishes.

One day during a particularly brisk spring that, according to Pod, "we called Juneuary," a vanful of skaters, including Pod and rising star Chaz Pineda (pictured), made their way to a skate park in Donald, Oregon, a small town about 25 miles south of Portland. As Chaz skated, Pod shot. Using his Nikon D300, a fish-eye lens, as well as two Nikon sb800 flashes remotely triggered, and inching as close as possible to the tricks, Pod got this Phillips Air. He says, "The thing I love most about skateboarding is its expression of freedom and individuality." To view Pod's zine, check out *www.sauceskateboardzine.com*.

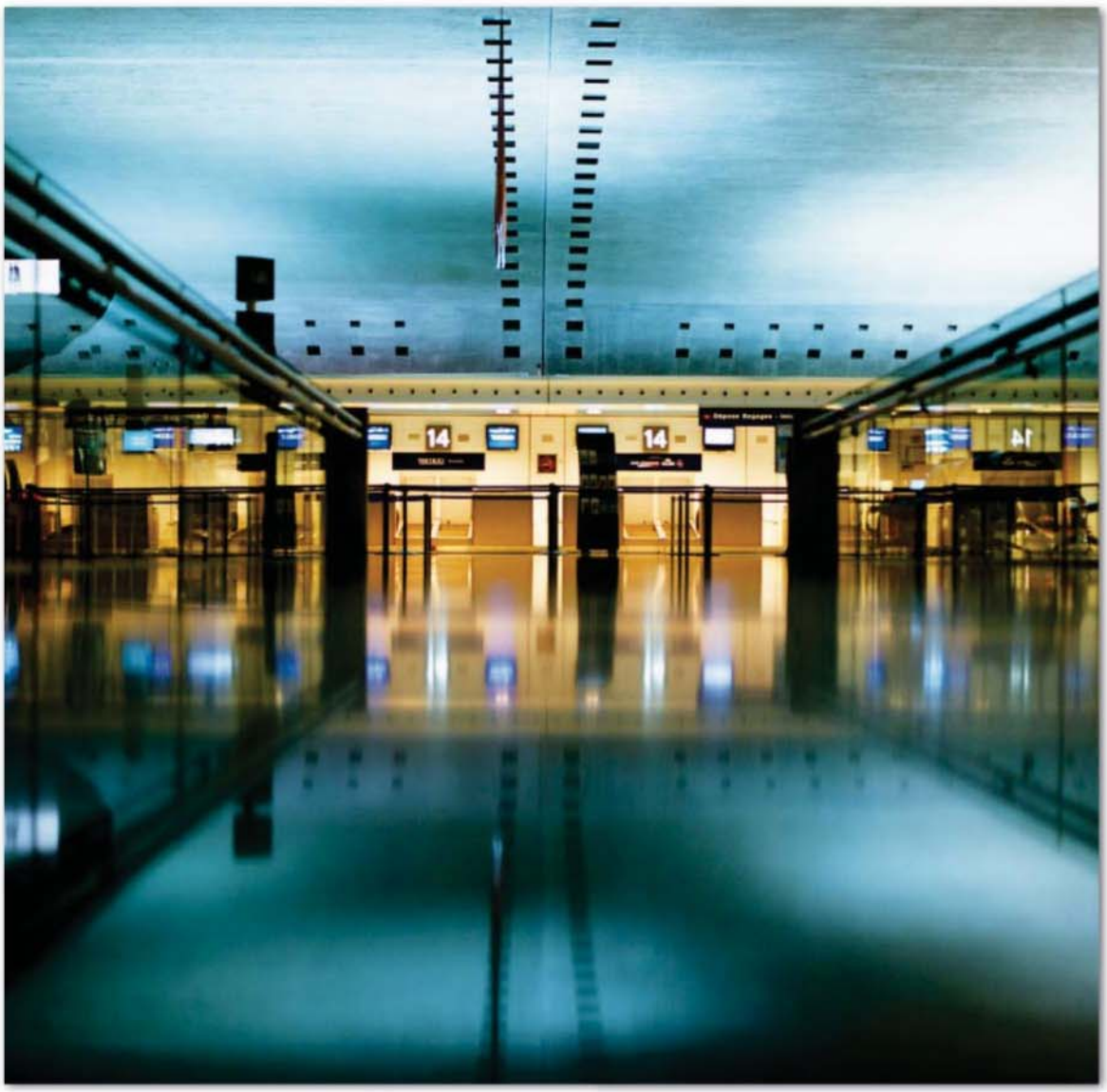
◀ **RUNNER UP:**
David K. Chan
Davis, CA

▼ **RUNNER UP:**
Jurgen Leo Foley
Newcastle West,
Co. Limerick,
Ireland



▲ **RUNNER UP:**
Raoul Sanda Matundu
Orange, NJ

RUNNER UP: ▶
Mike Edwards
Orlando, FL



▲ **WINNER:**
Estelle Dougier
Paris, France

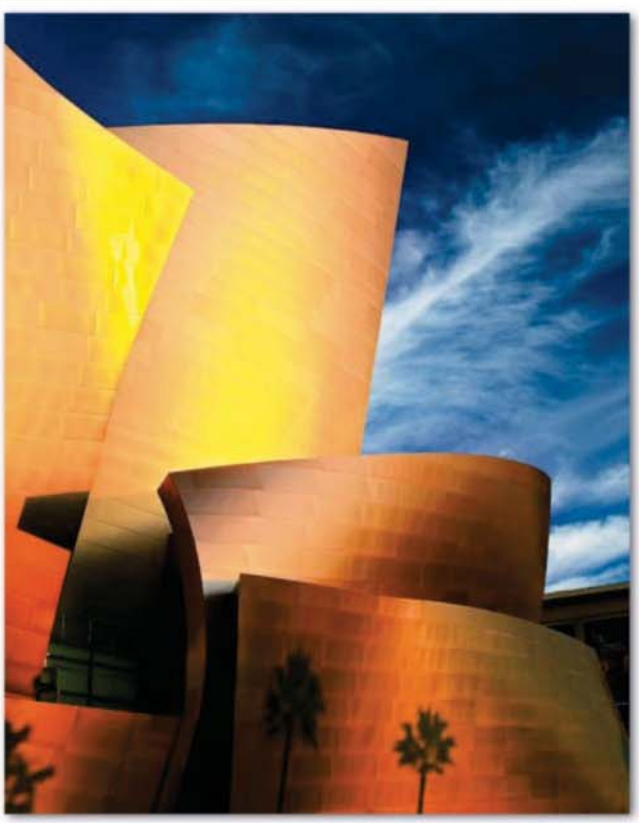
What do you get when you give a lawyer a camera? It sounds like the beginning of a bad joke—unless that lawyer was Estelle Dougier. Now a professional photographer, Estelle made her first foray into photography while pursuing her master's degree in international law at Columbia University in New York City (an ocean away from her native France) by taking classes at the International Center of Photography on the weekends. "It became my passion," she says.

Whether she's shooting on an empty street or at the Moulin Rouge, most of Estelle's work uses darkness—or the idea of night—as a backdrop. This winning image, taken at the Charles de Gaulle airport before the world had had a chance to wipe the sleep from its eyes, is no exception. "I had to take a plane, so I went in really early, maybe 5 a.m., to photograph," Estelle says. "To me, this picture conveys a sense of loneliness." She stood outside, and the gates were opening and closing as she shot. She intentionally blurred the foreground to focus on her purpose. "A lot of my pictures are like that because my camera is not automatic," she says. "I like to control the art, not let the camera decide." To view more of her work, visit *www.estelledougier.com.*

RUNNER UP:
Todd McDonald
Tampa, FL

RUNNER UP:
Seth Roros
Mechanicsburg, PA

RUNNER UP:
Sam Li
Bellaire, TX



RUNNER UP:
Dean C. Vu
Westminster, CA

▲ **WINNER:**
Faisal Almalki
Riyadh, Saudi Arabia

Egypt is very photogenic—think: the Great Pyramids, the Sphinx, and the Valley of the Kings. However, that was not all that Faisal Almalki set out to capture on his visit: He had heard that some camels give their owners a kiss, and he wanted to see if he could get a photo of it. After he found this agreeable pair and took a few shots, "the guy looked so unnatural," Faisal says. "I asked him jokingly, 'Did you guys have a fight last night?' And then I got this, which was even better." He's titled the image *Happy Together!*

The photo has already received a good deal of attention: It was awarded Best in Category in *National Geographic*'s World in Focus 2007 competition. "Most people smile when they see it," Faisal says, " but I once had someone ask me why I didn't Photoshop the picture to get rid of the guy's yellow teeth. I said, 'If he didn't spend time on his teeth, neither will I.'"

Always interested in the arts on some level, Faisal was unable to study the field, because, at that time, there were no schools in Saudi Arabia that offered this focus. Instead he pursued the closest thing he could: advertising. Four years ago, he took up photography as a hobby, but it quickly became a passion, "I probably have 20 years worth of photos," he says. In the beginning, he kept his work to himself, but once he joined online forums and received positive support, he began to enter competitions—and win. In fact, he was recently nominated for a Lucie Award. "I'm extremely honored to be selected by *Popular Photography* in this year's competition for my image of the camel and its owner," he says. "Right now, I'm smiling as much as both of them." To view more of Faisal's work, visit *www.exactish.com.*

◀ **RUNNER UP:**
Feldy Suwito
Clarksburg, MD

▼ **RUNNER UP:**
Anthony M. Tortoriello II
Barrington, IL

▲ **RUNNER UP:**
Abbie Warnock
Sandy, UT

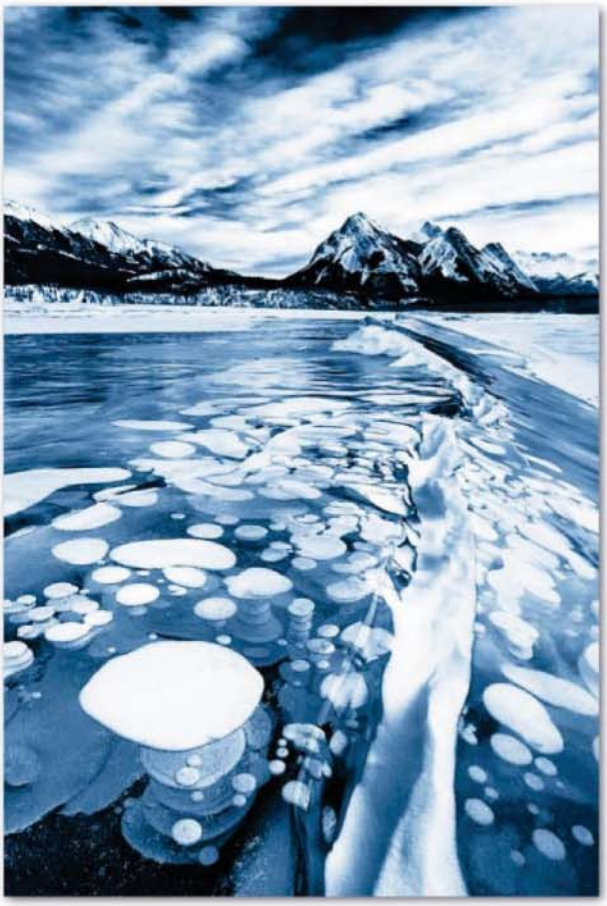
RUNNER UP: ▶
Bernard Bowles
Laval, Quebec, Canada

WINNER:
Robin Harrison
Ocean City, MD

The great egret is nature's haiku. There's a poetry in its plumage, which is white as a full moon and, in breeding season, sticks out here and there like a pillow that's been through one too many pillow fights. Robin Harrison framed this nesting pair in Florida with her Canon 5D. Hundreds of miles away from her native Maryland, she was in the state attending a photo festival last May and took a four-day workshop at the St. Augustine Alligator Zoological Farm.

About 65 American Alligators lurk in the wetlands at the farm, and every year herons, ibis, spoonbills — and, of course, egrets — migrate here to roost. The alligators provide the birds with a built-in security system, and the birds provide the alligators with an occasional snack. It's about as close as nature gets to the lion lying down with the lamb. From the boardwalk that takes visitors into the heart of the rookery, Robin spotted these egrets. "I got lucky with this image," she says. "It's unusual to get their heads together like this."

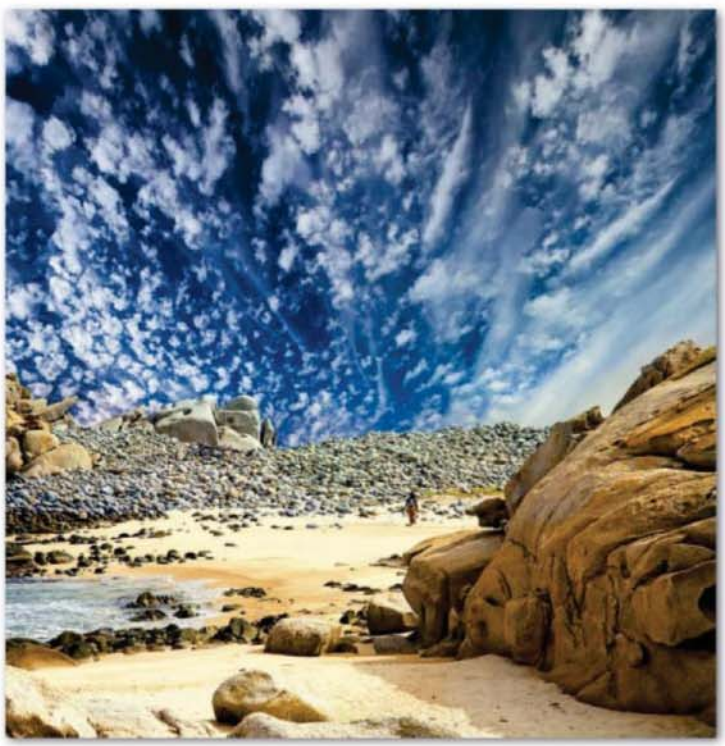
Robin discovered photography 15 years ago when she bought her first telephoto lens to take pictures of her kids playing sports. Since then, she's shot everything from her rabbits and deer in her backyard, to wild ponies that roam nearby Assateague Island, to canyons at an Arizona. "I learn just as much from other photographers as I do from the instructors," she says. And, although she claims to "not have an artistic bone my body," she's worked hard a developing her composition skills, which this image beautifully displays.



RUNNER UP:
Darwin Wiggett
Cochrane, Alberta, Canada

RUNNER UP:
Jack Levy
Weston, FL

RUNNER UP:
Karen Meyer
San Francisco, CA



RUNNER UP:
John Pollock
Tucson, AZ

WINNER:
Dina Goldstein
Vancouver, BC, Canada

When the bell sounds and the thoroughbreds burst through the gate at Hastings Racecourse in Vancouver, British Columbia, you can bet that most eyes in the house are turned toward the track ... but not photographer Dina Goldstein's. For four years, Dina worked on a project she calls *Trackrecord*, shooting portraits of all of the colorful characters that populate the place.

At the time, many of the walls were painted a shade of blue, striking similar to the complexion of Papa Smurf. After Dina spotted a potential subject, she would ask to take their portrait against one of the walls, engaging them in conversion while she shot. "It was an interesting, unique, and sometimes dangerous group," she says with a laugh. Dina saw this woman walking with her husband, eating ice cream, and asked to take her picture. "I didn't notice until later that she had a little bit of ice cream on the corner of her mouth," she says. "I think people really connect with her even though she's older, because there's something fresh and childlike about her. She still has that twinkle in her eye—and we all want that."

A veteran photographer of 15 years, Dina credits her success to working hard from day one. And regardless of what assignments she takes, she keeps busy with a personal project, like her most recent *Fallen Princesses* series. To view more of her work, visit *www.dinagoldstein.com*.

RUNNER UP:
Kevin Cozma
Takamatsu, Kagawa, Japan

RUNNER UP:
Faisal Almalki
Riyadh, Saudi Arabia

RUNNER UP:
Martina Brandstetter
Munich, Germany

RUNNER UP:
Monica L. Shulman
New York, NY

▲ **WINNER:**
Gail Vitikacs
Potomac Falls, VA

It's 1 a.m, and the world is quiet. Most people are dreaming, wrapped in the pitch-black comfort that the deep of night affords—but not Gail Vitikacs. By day, Gail is a wife, mother, and IT employee. But nightfall often finds her in downtown D.C., Nikon in hand, among the shadows of monuments on The National Mall. Were it noon, the place would be thick with tourists and she'd have to vie for Lincoln's gaze. At her chosen hour, it's just her, a photographer friend, and sculpted marble, granite, and sandstone bathed in moonlight.

On the frigid January day that this photo was taken, the tilt of the earth brought dusk by 5:40 p.m. As the crowds dispersed to seek shelter and warmth, there was Gail, under the Ulysess S. Grant Memorial, waiting for her friend to finish up a shot at another location. "All of a sudden, I looked up and saw this perspective," she says. "I immediately set up my tripod." Through her lens, she captured the furious energy of the horses and a sense of pride. She calls the photo *Freedom's Run*.

Part of a military family (her dad was a Marine, her husband was in the Army, and her daughter is in the Air Force), Gail's passion is Americana. During the three years she's worked on her monument series, Gail has had her moments of comedy (she's fallen off the Lincoln Memorial and convinced a White House guard to let her climb the back fence for a better angle) and managed to capture humanity (an embrace in silhouette by the Rainbow Pool at the World War II Memorial; grief beside the Vietnam Veteran's Memorial Wall). To view more of her work, visit *www.zenfolio.com/gvphotos* or *www.betterphoto.com/?gail*.

◀ **RUNNER UP:**
Marcus Brammer
Denton, TX

▼ **RUNNER UP:**
Angela F. Garcia
Quezon City, Metro Manila, Philippines

▲ **RUNNER UP:**
Eva Gryk
New Britain, CT

RUNNER UP: ▶
Geoffrey Ansel Agrons
Cape May, NJ

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wishes to thank everyone who entered the *Popular Photography* 15th Annual Photo Contest and to congratulate the Grand Prize Winner and the category prize winners.

GRAND PRIZE

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NATURE

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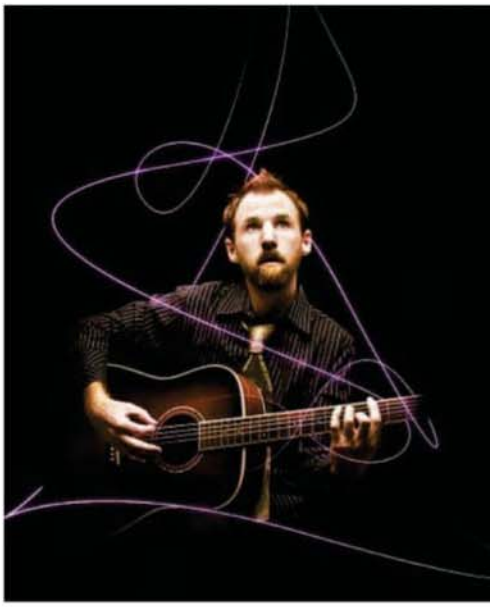
Text by Peter Kolonia
Photos by Stephen Poff

MANYMe

Want to learn lighting? Shoot yourself.



In late 2006, Stephen Poff, then 32 and a television producer from Montgomery, AL, was frustrated by what he *didn't* know about photography and lighting, so he challenged himself: Every day for a year, he would make a self portrait. Why self-portraits? "Because the model is always available, and he works for free," answers Poff.

Each portrait would have character and personality (not necessarily his own), and be radically different from the others. Each would tell a story. Each would also force him out of his comfort zone and teach him something new about photography, image editing, and/or lighting.

The portraits, which he uploaded to his Flickr page daily, were so successful that they have spun off their own Flickr group (www.flickr.com/groups/365days), now more than 10,000 members strong. Its devotees post podcasts and tutorials that help photographers around the world produce their own self-portraits.

Clever and entertaining, Poff's hundreds of portraits are also a *de facto* textbook on photography, image editing, and lighting. In detailed captions, he explains how he conceived and executed each image. These exemplify how lighting creates mood and suggests character, as well as flattens, expands, or otherwise sculpts space within a photo.

The creation of this "textbook" was itself an educational process. "When I first started, I was afraid of strobes," says Poff. "I was familiar with hot lights from my work in video, but hot lights weren't bright enough to stop action or to allow smaller apertures, so I put together a strobe kit with a single Canon 430EX shoe-mount Speedlite. I used it off-camera on a lightstand, and fired it with an inexpensive radio remote system I found on eBay."

STEPHEN POFF'S TOP LIGHTING TIPS

- Get your flash off-camera.
- Light indirectly, by bouncing off large, white surfaces.
- You can get great results with inexpensive lights.

As Poff's inventory of lighting tools grew, so did his skills. He started by using flash from the Speedlite, diffused through or bounced off a cheap umbrella. Then he graduated to bouncing flash off walls and ceilings, and feathering its output to create subtle shading and shadows in the backgrounds.

Eventually he developed a more cinematic, three-point lighting techique that encompassed key, fill, and background lights. This added depth and gave objects more modeling and dimension.

"The fun started when I began mixing up my sources," he says. "Often the key light would be strobe, but the background or strong rim light would be my video hot lights. It's a great way to suggest that there's a world outside the frame of your picture, and just like the real world, it's lit by many different colors of light."

Finally, Poff mastered the art of using light to unify elements in image composites. "Controlling the direction, intensity, and color temperature of the lighting," he says, "was the easiest way to combine three or four images and have it appear to be a single take."

Want to try Poff's self-portrait route to learning lighting's fine points? Start by studying his results at www.flickr.com/photos/stephenpoff.

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SEEWorld

WILSON TSOI

EARTH'S MOST EXOTIC SUBJECTS
ARE CLOSER THAN YOU THINK
BY PETER KOLONIA

Can't swing Cozumel this winter? Consider a nearby destination that offers all the outlandishly colorful creatures of a Caribbean snorkel safari at a tiny fraction of the cost: a major aquarium. If you're like most Americans, you live within a 90-minute drive of one. And many include aviaries and plant habitats, as well.

Think you can't get good pictures there because it's too dark, too crowded, or too photographically challenging? We know three guys who disagree. They're staff photographers at some of the nation's most-visited aquariums, and each assures us that you can get great pictures of some of the planet's most amazing creatures with equipment you probably already own.

"First and foremost," says Bob Couey, visual services manager for SeaWorld, San Diego, "pack so your photo gear fits in a single bag. If you're carrying much more, and it appears that you're shooting commercially, security is likely to stop you."

When following fish across a large tank, it also helps to have all your stuff in a single shoulder bag. That way, you're not forced to leave expensive equipment at one end of the window as you chase your quarry toward the other.

What should go in that bag? Bruce Carlson, chief science officer of the Georgia Aquarium in Atlanta, answers, "You can't really shoot in an aquarium without an SLR and an off-camera flash. Leave the point-and-shoot at home. I also recommend an image-stabilized moderate tele zoom such as Canon's 17–85mm f/4–5.6

◀ **LESS CAN BE MORE:** Wilson Tsoi prefers smaller venues such as the Oregon Coast Aquarium in Newport, OR, which let him use a tripod with his Nikon D200 and 10–20mm f/4–5.6 Sigma lens for this shot. Besides sea life, he suggests focusing on architecture and, most of all, visitors.

SEEWorld

▲**GET CLOSER:** For maximum sharpness, look for subjects near the aquarium glass. The less water between you and your subject, the sharper it can be. Joachim S. Müller shot this close-up at Loro Parque Aquarium on Tenerife with a Sony Cyber-shot DSC-F828.

IS—or faster, if you can afford it."

Because many exhibits are too dark to make sharp pictures of darting subjects, flash is often necessary. But take it off-camera. Otherwise, its output will bounce back from the reflective tank surface, causing underexposure and distracting hot spots in your images. Moreover, the harsh, direct light from an on-camera flash will visually flatten out and compress the shape of your subjects.

You've never used an off-camera TTL flash? This kind of lighting has never been easier. Choices include wired or wireless, radio or infrared, on a bracket or off. Most systems weigh little, are fully automated, and, if you choose wisely, don't cost much.

If you're working alone, an off-camera, side-arm extension bracket makes sense, but better and more varied pictures result if you simply ask a friend to hold (and aim) the remote flash for you. Visit your camera maker's website to explore off-camera flash options. If prices seem steep, search for radio remotes on eBay. (Radio signals don't travel well through water, however, so this option won't work if you put the light on the opposite side or above a tank.)

"Always bring a polarizing filter," says Carlson. "It won't help much eliminating reflections on glass or acrylic tank walls, but for open-top exhibits where you want to shoot through the water's surface, it will reduce or eliminate reflections."

George Grall of the National Aquarium in Baltimore also recommends a matte-black antireflection lens baffle. It's a rectangular foam-core panel up to 20x24 inches with a hole cut in the center for the lens. Shooting through one will eliminate tank reflections, especially for wide-angle shooting. The closer you are, the better it works.

Other useful gear: kneepads and a monopod. Tripods prevent you from chasing a moving subject and are often prohibited because they can trip up other visitors.

And watch out for those other visitors! Aquariums can get very crowded. "The best days of the week are usually Monday through Wednesday, and early in the morning, right after opening," says Bruce Carlson. "There are fewer people and the tank walls aren't smudged up yet." Most aquariums experience a downturn in attendance after Labor Day through early November, when school field trips start up again.

CLOCKWISE FROM TOP LEFT: RALF SCHULTHEISS/ZEFA/CORBIS; JOACHIM S. MÜLLER; MICHAEL GROSSMAN; MICHAELGROSSMANPHOTOGRAPHS.COM

◀**GO AUTO:** Aquarium lighting, especially in daylit, open-top tanks, often means shifting light levels and color temperatures, as well as mixed light sources. For shots like this one by Ralf Schultheiss, auto exposure and white balance settings are often best.

SILLO SECRET: The trick for silhouetting people against glass? Spotmeter the water beyond them. Michael Grossman shot this at the Monterey Bay (CA) Aquarium with a handheld Canon EOS 5D and 28–75mm f/2.8 Tamron lens; 1/60 sec at f/2.8, ISO 1600.

▲**LET THE SUN SHINE IN:** Plan your aquarium trips for bright, sunny days, which will better your chances for great pictures of sea life in open-top tanks. Christopher Chan captured this sunlit whale shark (and friends) at the Kaiyukan Aquarium in Osaka, Japan, with a Canon EOS 30D. He pressed his 10–22mm f/3.5–4.5 Canon zoom against the tank to minimize reflections and camera shake.

CHRISTOPHER CHAN

The best time of day? For exhibits with natural sunlight, visit in midday or early afternoon for great natural lighting. Different fish are active at different times throughout the day, so try to discover when your favorite subjects are at their most photogenic.

Shooting through glass or acrylic windows poses its own set of photographic challenges. "In fact," says Bruce Carlson, "exhibits with highly curved windows—bubble tanks, for example—typically distort so much that clear, sharp photos are impossible."

Acrylic windows are often very thick. "Our largest is 24 inches front to back," says Carlson, "but most windows average anywhere from 2 to 8 inches. You can't shoot through them at an angle without getting a lot of distortion and chromatic aberration. The trick is to shoot straight through the window to your subject at the tightest possible distance." But not too close. "Acrylic windows scratch very easily," he warns. "If you press a normal lens shade hard against one [to eliminate reflections], you can easily leave scratch marks. To prevent this, use only lens shades made of soft rubber."

High ISOs (800 or 1600) will allow you to shoot at the faster shutter speeds that freeze motion. (Most of these photographers use 1/125 sec or faster.) Shooting RAW will let you address white balance issues with greater flexibility later in software.

And software is your friend. More than any other type of nature photography, aquarium shooting almost *requires* digital touch ups. Air bubbles and floating debris in the water need to be cloned out. Noise reducers, such as Nik Software's Dfine 2.0, make shooting at ISO 1600 more viable, and sharpening can help bring back detail that thick tank windows begin to blur out.

10 TIPS OUT OF THE BLUE

- **Forget AF.** More often than not, autofocus latches onto smudges or scratches on the tank window, not on the creature within.
- **Slower is better.** Especially when you're just starting out, concentrate on slower-moving creatures, such as lion fish, jellyfish, and frogs. "When all else fails," says Bob Couey, "photograph the beautiful corals and anemones. They don't move at all!"
- **To clean tank walls,** bring a soft cloth.
- **Leave the kids at home.** You'll get better pictures without an entourage.
- **Fire freely**. When shooting fast-swimming fish, don't wait for decisive moments. Set the continuous drive mode and fire away until you, your camera, or the fish poops out.
- **Use high-speed sync.** Remember your flash's high-speed sync mode? It lets you use flash up to your camera's fastest shutter speed, and aquarium

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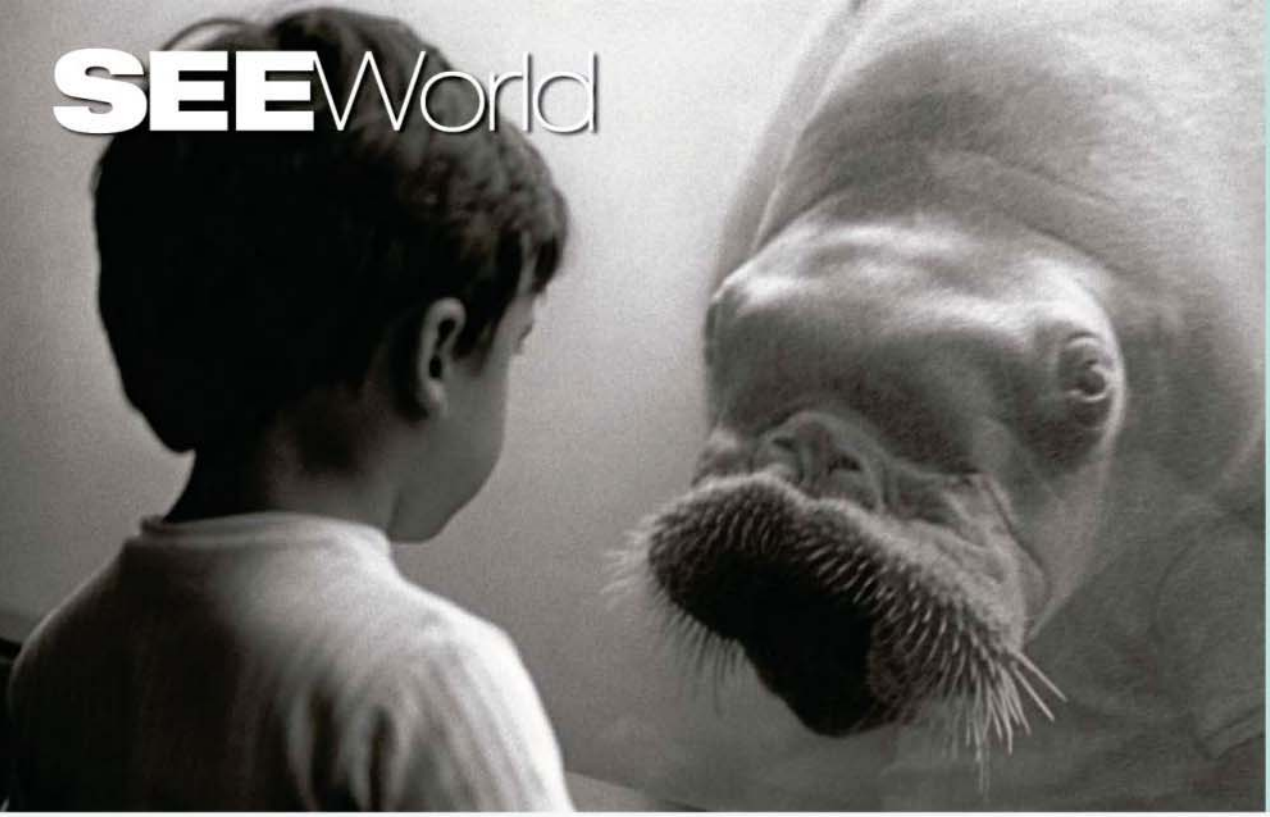

◀ CLOSE ENCOUNTER: Aquariums make great settings for family portraiture: Capture the interaction between your children and the sea life. If your main goal is to photograph the creatures, though, better leave the kids at home. Beau Brashares shot this encounter at the New York Aquarium in Coney Island with a Nikon FE2 and 105mm f/2.8 Nikkor on Kodak Tri-X film.

BEAU BRASHARES, WWW.BRASHARES.COM

shooting is a perfect situation for it. It will capture fish sharply, even when the ambient light is bright enough to cause motion blur at normal sync speeds.

■**Use rear sync.** "Set your flash's rear-curtain sync mode to put motion blur behind your swimming subject, not in front of it," says George Grall.

■**Crop tight.** "Fill the frame with your colorful subjects," says Couey. "And if your DSLR offers it, dial up saturation to retain that color."

■**Don't waste time.** "No Flash" exhibits, super-fast-moving fish, and creatures behind scuffed glass are typical time-wasters. Move on.

■**Join up.** Aquariums are often very photo-friendly places. They link up with photo clubs and community colleges, and may even offer their own photo classes. Ask the membership office about opportunities such as special entry privileges, as well as lectures and tips from expert photographers.

The one recurring theme these pros stress: Patience and return visits are your best hope for killer aquarium photography. Don't expect miracles the first time out. But also don't doubt that, with patience and the right equipment, miracles will come.

SeaforYourself 12 GREAT AQUARIUMS AROUND THE U.S.

●ADVENTURE AQUARIUM, CAMDEN, NJ
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●AQUARIUM OF THE PACIFIC, LONG BEACH, CA
www.aquariumofpacific.org
In addition to the three main galleries highlighting the major regions of the Pacific, there's a Shark Lagoon, as well as a Lorikeet Forest aviary with tropical birds and a waterfall.

●DISCOVERY COVE, ORLANDO, FL
www.discoverycove.com
Get a more hands-on, outdoors experience in the free-flight 250-bird aviary, the Shark Habitat, and the swim-in coral reef with 100 stingrays. Or take a dip with a bottlenose dolphin.

●GEORGIA AQUARIUM, ATLANTA, GA
www.georgiaaquarium.org
With more than 100,000 animals representing 500 species, the Georgia Aquarium offers myriad photo ops. It's also home to both cold-water belugas and whale sharks.

●JOHN G. SHEDD AQUARIUM, CHICAGO, IL
www.sheddaquarium.org
This long-established aquarium is packed with stunning modern features such as the Wild Reef, where sharks circle overhead and stingrays glide below the see-through floor.

●MONTEREY BAY AQUARIUM, MONTEREY, CA
www.montereybayaquarium.org The 28-foot high kelp forest at this converted cannery is home to wolf eels and sardines. This aquarium also houses one of the country's largest collection of jellies.

●MOODY GARDENS, GALVESTON, TX
www.moodygardens.com
Texas may be the last place you'd expect to find penguins, but you can check them out here along with seals and sharks. While you're there, visit the Rainforest Pyramid full of tropical plants and birds.

●MYSTIC AQUARIUM, MYSTIC, CT
www.mysticaquarium.org
Swim with a beluga whale, touch a cownose ray, learn how to care for a penguin, watch a sea lion show, or gaze at the fluorescent coral at this hidden gem.

●NATIONAL AQUARIUM, BALTIMORE, MD
www.aqua.org Come for the impressive reptiles, giant turtles, and rainbow variety of frogs. Stay for the giant Pacific octopus that instantly changes color and skin pattern.

●OREGON COAST AQUARIUM, NEWPORT, OR
www.aquarium.org Unlike the mega-aquariums, this friendly spot keeps it local. Fortunately, lots of compelling creatures live here, including turtles, sea otters, seals, sea lions, and an amazing variety of jellies.

●SEAWORLD SAN DIEGO, SAN DIEGO, CA
www.seaworld.com/sandiego For sheer variety, you can't beat this venue's Aquarium de la Mer, which offers macro-scaled seahorses, a giant Pacific octopus, and much in between. Trying to find Nemo? He's here; so is Shamu.

●TENNESSEE AQUARIUM, CHATTANOOGA, TN
www.tennis.org It's rare for an inland aquarium to be packed with this much wildlife—from penguins to crabs, jellies, sharks, eels, and even butterfiles and birds.

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5 SECRET WEAPONS INSIDE YOUR DSLR

Your camera is more powerful than you think

By Dan Richards

DIGITAL SLRS AREN'T just picture-taking machines—they're mini processing labs. The picture controls in a typical consumer DSLR, in fact, can rival basic image-editing software in the ways they can improve and transform your pictures.

But you have to know how to use them.

Here are five of the most useful picture controls in current DSLRs and a short course on each, covering both the intended purpose and alternative uses that may surprise you.

Warning: Camera models—even ones from the same manufacturer—differ widely on the ways to access these

1 KELVIN WHITE BALANCE: Marc Adamus used a WB of 6900 K to maintain blues in this warm-hued scene (left), taken with a Canon EOS-1Ds Mark III and 16–35mm f/2.8L Canon EF lens. With a color temp of 12,500 K applied (right), it goes extremely warm.

controls. They may be found on buttons, in menus, and occasionally on dials, so consult your instruction manual. Dog ate your manual? Go to the camera manufacturer's website—almost all of them provide free downloads in PDF format.

1 KELVIN WHITE BALANCE

Imagine a continuously variable cooling/warming filter that can go from icy blue to warm orange with the spin of a dial. Your camera very likely has one built in.

The majority of DSLRs sold today have white balance that can be set in Kelvin degrees, a measurement of the tone of the light. Go into the white balance (WB) menu of your camera and choose the Kelvin or K setting. Setting the Kelvin temperature to a low number (2500–3500 degrees is low on this scale) will push your pictures toward blue. Setting a high number (8000–10,000) will shift the color toward amber.

■TECH NOTE 1: This can be confusing, as the Kelvin *settings* on a camera counter the Kelvin *readings* made by a color meter. The camera settings act as filters to compensate for the color temperature of the scene—you need blue filtration to take out the yellow of incandescent lighting, for example, and amber filtration to counteract the blue in the shadows of a clear winter day.

■TECH NOTE 2: The most extreme effects result from going completely the "wrong" way with Kelvin settings. Take a picture lit by incandescent or firelight with your camera set to 10,000 K, and it will be a study in deep reds. Shoot a landscape on a misty, rainy day at 2500 K, and you'll get the iciest blue you ever saw.

■TECH NOTE 3: Most cameras that have Kelvin adjustments also have adjustments along the green-magenta color axis. You can do really weird stuff with this one, but there's a practical application: Nudge it toward magenta to fine-tune color balance under fluorescent lights.

2 AUTO-BRACKETING

OK, you're not a RAW kind of person and you don't want to twiddle with picture adjustments after the fact. But you also want to get the exposure just right. It's time to make friends with autobracketing.

Every DSLR has this feature, which automates the process of taking a series of images at different exposures, usually an underexposure and an overexposure bracketing the "correct" exposure. You can set it to take the brackets at different gaps—a third-stop (0.3 EV), half-stop (0.5 EV), whole stop (1 EV), and so on. Some cameras cater to the truly nervous by letting you take a five-shot bracket. And as the camera can shoot them in a burst, the process takes only a second or two longer than making a single exposure.

The control is usually found on a drive mode button or menu option. You set the gap you want, and the number of shots to make. Some cameras let you vary the order of the shots—from highest to lowest exposure, or starting with the correct exposure, and so on.

Don't get hung up on the notion that autobracketing is a kind of doofus-proofing. Plenty of very experienced photographers routinely bracket exposures, not necessarily to prevent mistakes but to get a range of renditions. Several of the brackets can turn out to be "right" exposures. You may prefer slight underexposure, for example, because it intensifies

MARC ADAMUS, WILDPHOTO.SMUGMUG.COM

4 JPEG PROFILES: We shot these flowers with a Nikon D700 and 60mm f/2.8G AF-S Micro-Nikkor lens, with the JPEG profile set to Neutral (left half). Then we applied the Vivid profile to the RAW file during processing and added more saturation (right half). *Pow!*

color saturation. And a picture exposed above the meter reading may have a nice high-key effect.

■TECH NOTE 1: How the brackets are made depends on which autoexposure mode you're using. With shutter-priority set, the camera will change the aperture to make the various exposures. Switch to aperture-priority, and the camera will hold your aperture setting and vary the shutter speed up and down. Keep this in mind if you want to maintain a certain aperture for depth of field, or a certain shutter speed for motion freezing or blurring.

■TECH NOTE 2: You can make "one-way" brackets, too—a sequence only in the direction of overexposure or underexposure. Set the autobracket first, with the number and gap you want. Then go to exposure compensation (often a button) and shift the exposure up or down to move the bracket in the direction you want. Most cameras show you the exposures along an exposure index bar (as shown here).

Why would you do this? Because you're taking a picture that you know should turn out dark (a city scene at night) or light (a sunny day after a snowstorm).

■TECH NOTE 3: You can use a set of widely spaced exposure brackets to make a high-dynamic-range (HDR) photo. See www.PopPhoto.com for a lot of help in doing this.

3 POP-UP FLASH COMPENSATION

Want to guarantee that outdoor portraits, even those taken in tough light, will make both you and your subject look good? You don't need any extra accessories to do it.

The pop-up flash is your secret here, but you have to take it off its default (very point-and-shooty) mode. First, go to the flash mode control and set it to fill-flash, also called forced flash. Usually this is a lightning bolt icon, sometimes paired with the word "fill." This mode makes the flash fire even in bright daylight, with the correct ambient exposure.

Next, set the forbiddingly named flash-exposure compensation control to –1.3 EV or thereabouts. Now leave those settings alone. If you don't want the flash to fire, just snap the flash down—it will stay down in any standard exposure mode except auto.

This setting will produce a light kiss of flash in portraits—just enough to open up shadows, but not enough to look obviously flashed. It works in backlight, sidelight, and harsh overhead sunlight. And it works on nonhuman subjects—try it with foreground flowers or a black cat whose face sometimes turns into a bleak shadow in daylight pics.

■TECH NOTE 1: Although pop-ups are notorious for producing redeye, this is much less likely in daylight, when people's irises are stopped down for a smaller target pupil.

■TECH NOTE 2: Portraits look best with shallow depth of field, so keep your ISO low to allow you to shoot at a wide aperture.

4 JPEG PROFILES

While you're sitting in front of the computer adding (or reducing) saturation, or increasing (or decreasing) sharpness, maybe you're wondering why you can't just do that in-camera. You can!

5 DYNAMIC RANGE EXPANSION: We turned off the Sony Alpha 700's Dynamic Range Optimizer for this shot, taken with a 16–80mm f/3.5–4.5 Zeiss Vario-Sonnar DT lens. The shadows were murky, so we set Advanced DRO to +5, which opened up the details.

Every camera maker has its own term for JPEG profiles (Canon, Picture Style; Fujifilm, Film Simulation; Nikon, Picture Control Optimization; Olympus, Picture Mode; Pentax, Custom Image; Samsung, Picture Wizard; Sigma, Image Parameter; Sony, Creative Style). These let you set a specific profile (contrast, color saturation, sharpness, and sometimes skin tone) for JPEG capture. You'll find them in menus, but sometimes there's a button to bring up the selection.

You can use preset profiles (such as Neutral, Portrait, Vivid, etc.) or a custom profile of your own making. Within presets you can also tweak individual parameters. Want that over-the-top Fujifilm Velvia look? Set the most saturated JPEG profile (it's often called Vivid), push the contrast up one notch, boost the saturation up as high as it will go, and bring down the sharpness one notch.

■TECH NOTE 1: Keep in mind that a JPEG gives you limited leeway for further adjustments later in an image-editing program. But if you opt to shoot RAW files, you can apply a profile when you convert the RAW file to a JPEG using the camera manufacturer's conversion software. It's sometimes a matter of one click, and you can try a variety of styles for the same picture.

■TECH NOTE 2: Most current Nikon, Olympus, Pentax, and Samsung DSLRs let you apply a JPEG profile (as well as other adjustments) when you convert a RAW file in-camera.

5 DYNAMIC RANGE EXPANSION

Oh, those contrasty scenes—if you expose for the shadows, the highlights get blown out. And vice versa. Why can't a camera stretch this dynamic range? Chances are yours can.

Most DSLRs have a control for expanding dynamic range, and as with JPEG profiles, every maker uses a different name (Canon, Highlight Tone Priority; Fujifilm, D-Range; Nikon, D-Lighting; Olympus, Shadow Adjustment Technology; Pentax and Samsung, HDR Filter; Sony, Dynamic Range Optimizer).

This can be a single setting with no adjustment, an adjustable setting, or a setting that adjusts automatically according to the lighting. Some models apply the effect on the fly; others allow you to apply it after the shot. Look for the setting in the menus.

■TECH NOTE 1: As in life, there is no free lunch here. Pushing up detail in the shadows can also boost noise, especially at high ISOs. So keep the ISO as low as possible when increasing dynamic range. (Some cameras limit the ISO range when you use expanded dynamic range.)

Also, the exposure may appear to change when you apply a DR boost—some cameras may increase overall exposure while maintaining a highlight tone, others may decrease the exposure while holding shadow area constant. You may want to fine-tune exposures with an autobracket.

■TECH NOTE 2: As with JPEG profiles, you can apply dynamic-range controls during RAW conversion using the camera maker's software. This is the better method if you think you might want to change the look of your photos in the future—a JPEG gives you much less flexibility.

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Men & women photographers—what's the real difference?

By Kerrie Mitchell

The Sex Factor

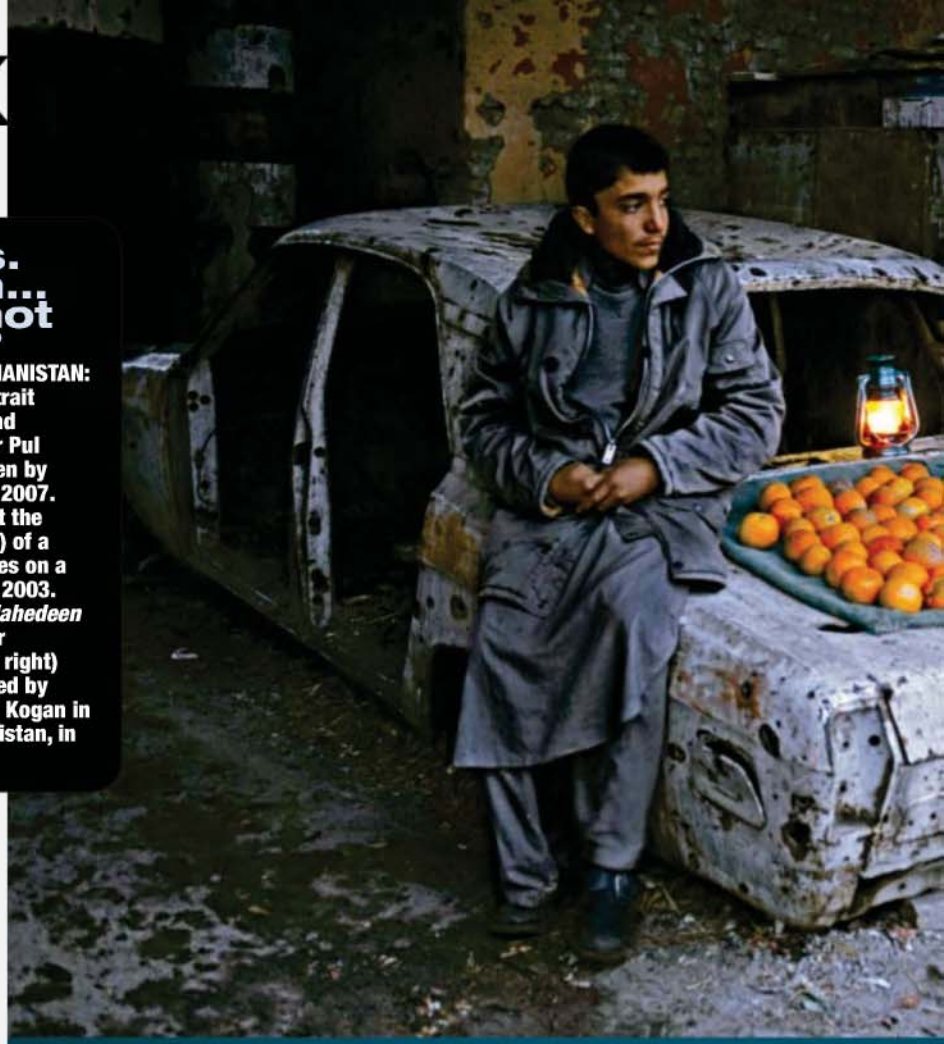
Can you tell who took this photo? Turn the page and find out...

AT THE INTERNATIONAL CENTER of Photography in New York last year, Associate Curator Kristen Lubben found herself talking a lot about a timeless subject: the differences between men and women. She was co-curating part of an exhibit of photos of the Spanish Civil War by Robert Capa and Gerda Taro. The two had been lovers and professional partners at that early point in their careers. While Capa went on to become one of the 20th century's most renowned war photographers, Taro died in 1937 at age 26, after being struck by a tank.

The Sex Factor

Men Vs. Women... Who shot which?

CONFLICT IN AFGHANISTAN: This intimate portrait (previous page and left) of coal miner Pul i Khumri was taken by Steve McCurry in 2007. McCurry also shot the portrait (top right) of a boy selling oranges on a street in Kabul in 2003. Villagers and *mujahedeen* fighters with their weapons (bottom right) were photographed by Deborah Copaken Kogan in Sanglakh, Afghanistan, in February 1989.



PAGE 73: STEVE MCCURRY. THIS PAGE, CLOCKWISE FROM TOP LEFT: STEVE MCCURRY (2); DEBORAH COPAKEN/CONTACT PRESS IMAGES

"We had Taro upstairs and Capa downstairs," says Lubben. "It was an interesting test case for some people—do men and women take different pictures? As I gave tours of the exhibition, I was constantly asked about it."

Such fascination makes sense. Gender is an endlessly debatable topic. The debate gets fiercer when it turns to boys-versus-girls. And the stakes get higher as more women take up cameras.

Of course, women have always been a force in photography. Yet in recent years, photo programs have seen a steady rise in the number of female students in everything from advertising to art to photojournalism. At top schools such as the Rochester Institute of Technology and the Art Center College of Design in Pasadena, women now outnumber men. But do they take different kinds of pictures?

"The perception of what you're asking is: Who makes better pictures?" says Dennis Keeley, chair of photography and imaging at the Art Center. "Nobody. Better pictures are made by better photographers. That is not gender-driven, except we have a society that's gender-divided. In discussing these things, it's not the answers—it's the questions."

The eyes have it

Our first question: Do men and women *physically* see the world differently?

There is some evidence that the answer might be yes.

A report from the *Online Journalism Review* made a splash in March 2007 when it reported an eye-tracking study that looked at where viewers glanced on a given news page on the web. When presented with an image of a figure, females most often looked at the face, while males focused both on the face and the crotch.

Funny enough for salacious blog posts, but the results may have been onto some serious differences in behavior. In 2000, *Life Sciences* published a Japanese eye-tracking study that found a marked difference between the gaze of adult men and women. When presented with an image, women looked for longer periods of time at fewer places, while men's eyes moved more frequently over the image.

Such intriguing results lend themselves to a host of ideas about detail-oriented women lingering patiently over a scene while stimuli-driven men scan it (seeking crotches?) like photographic Terminators.

The problem with such conclusions, though, is that they're based more on our own preconceptions about sex than on actual evidence. Laurent Itti, associate professor of computer science, psychology, and neuroscience at University of Southern California, notes that, while differences in visual behavior have been demonstrated in other studies, science hasn't proven what happens physically that creates such differences. "It doesn't tell you what's happening in the head," he says. "It doesn't tell you why."

Venus and Mars

Until researchers uncover all the mysteries of the male and female brain, we're left to our own, decidedly unscientific, observations.

Keeley sees differences in his students' approaches. "Women—these are generalities—are much more flexible in terms of their imagery. They're able to appropriate images easier." His male students, though, often take a technical view, saying, "'How much equipment can I leverage at this thing? I can light it, frame it, I'll use the big camera, the big lens.'"

Reid Callanan, director of the Santa Fe Workshops, sees more women than men drawn to fine-art photography. "That's a realm of emotion and memory. Those parts of ourselves are more easily accessible by women," he says. "I think women are more self-aware than we men are."

And Kathleen Hennessy, director of photography at the *San Francisco Chronicle*, laughs as she recalls a conference at which she was in a group with two male editors: "I started to notice that the men really talked about the physical dimensions of the photograph, the technical aspects, and the composition. One used the word 'geometry' all the time, which I'd never heard before. And the women tended to talk about the story and the emotion and the impact. I thought, *Well, that's the difference between men and women, isn't it?*"

This was a common theme in our interviews. But while it seems like just another chapter in the *Men are from Mars, Women are from Venus* saga, it does get to a larger point. "As you progress through your photographic career and experience, you learn that oftentimes you photograph from your dreams and your memories and your intuition and your background," says Callanan. "It's not just the perception through your eyes."

So, not even the most thorough eye-tracking study could explain the vast motivations and personal background each photographer brings to a scene. Our pictures are inextricably bound up with who we are and how we move through the world. If you believe that men and women *experience* the world differently, then it follows that they take different kinds of pictures.

Firing line

In search of differences, and similarities, in experience, we looked at a genre long dominated by men: war photography. It isn't long before familiar ideas about gender emerge.

Veteran conflict photographer and famed *National Geographic* shooter Steve McCurry, for one, doesn't think that men and women take different kinds of photos. Yet, he says, "I think the whole macho, act of aggression and war is more of a male thing—I think men are more drawn to going out and playing cowboys and Indians."

Deborah Copaken Kogan, a war photographer in the late '80s and early '90s who wrote the 2000 memoir *Shutterbabe: Adventures in Love and War*, has changed her mind about the role gender played in her work. "While

Men Vs. Women... Who shot which?

NEW YORK CITY: Children play with pieces of a broken mirror (top) from a car abandoned on Dodworth Street, Brooklyn, in 1999, where Brenda Ann Kenneally photographed the life of her block. In a shantytown in 1986 (bottom), Fred—just returned from prison—cries as he greets former girlfriend Rose. Eugene Richards included this photo in his 1987 book, *Below the Line: Living Poor in America*.

BRENDA ANN KENNEALLY (TOP); EUGENE RICHARDS (BOTTOM)

I was taking the photos, I didn't think I had a female take on war. I thought I was taking the same pictures as the guy standing next to me."

But, having recently assembled presentations of her photos, she says, "When I put together my slide carousel, I noticed that they were, for lack of a better word, female. Meaning a lot of what I was fascinated by in war were the children, the women: How does war affect family life? How does war affect the psyche of a child?"

Still, even in a hyper-male environment like combat, traditional ideas of what subjects men and women are drawn to don't tell the whole story. "With Gerda Taro, there's a tendency to say, 'Oh, well, she took great pictures of women and children. Or she was particularly interested in taking pictures of orphanages,'" Lubben says. "I was asked over and over, 'Was she more sensitive? Did she care more about civilian victims? Was she less likely to be in the thick of battle?' There's a presumption that she took more feminine pictures, which I don't think is borne out by the work."

Such assumptions imply that women don't photograph something as dangerous as a battle or that "female" subjects such as women and children count less in war coverage.

But Capa and Taro both took pictures of civilians. And Lubben notes that Taro made a series of morgue photos that are more brutal than any she could recall of Capa's.

"I'm not saying there aren't differences between male and female photographers," she adds. "But I think we need to examine why we imagine there might be, and what attributes we're all too inclined to ascribe to female photographers even before looking at the work."

For all the talk of "male" and "female" subjects and approaches, most of the photographers we spoke with see little difference in the kinds of pictures men and women take. More importantly, for each stereotype, plenty of photographers defy it.

Gender-neutral

Pulitzer-Prize winning *San Francisco Chronicle* photojournalist Deanne Fitzmaurice says that, whether you're a man or a woman, you need a certain set of traits—such as compassion, patience, and perseverance—to build a relationship with a subject and craft a long-term story.

"Who are the people who are doing that really successfully? Two who come to mind are Brenda Ann Kenneally and Eugene Richards," she says. "There's a female and male photographer who are using those skills and personality traits to get the stories they're getting."

Photographer Cara Phillips, co-creator of the online exhibition project Women in Photography (www.wipnyc.org), recalls her own education as a perfect example of stereotypes upended. "I studied with Joel Sternfeld—he's super-conceptual and intellectual, but he approaches everything from an emotional point of view," she says. "He didn't believe in taking pictures unless it really, really, *really* mattered. We never really bothered with the technical. He just expected you to understand what a good picture was and to find your way."

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The Sex Factor

Pamela Reed and Matthew Rader are a team of art and fashion photographers based in New York. They don't believe there's much difference in their individual pictures. In fact, Reed says flatly, "When we get back our photos, you can't tell which photos Matthew took or I took."

Subjective reality

But pictures aren't taken in a vacuum. The sex of the photographer matters because subjects react to men and women differently. This doesn't have anything to do with how the photographer perceives the scene, but it can still have a huge effect on the resulting photograph.

Indeed, Reed points out that female models generally perform differently in front of male photographers than they do in front of female ones. However, the models who work with Reed and Rader are faced with a team that includes both. "I don't think they know how to respond to that or which role they should play then," she says.

Adds Rader, "Perhaps that's why we see our work as asexual, because it gets canceled out."

Their experience with models underscores the subtle interplay between men and women, photographer and subject. But sometimes there's nothing subtle about it. The photographer's gender can be a huge hindrance or help in dealing with people, depending on the situation. And it can absolutely affect the kinds of subjects to whom he or she has access.

Deborah Copaken Kogan recalls assignments in Afghanistan where being a woman "hindered 200 percent" her ability to photograph the *mujahedeen*. "These guys were radical Muslims, and just the idea of having a woman along with them was totally antithetical to their way of being," she says. On the flip side, though, she could often go where male photographers weren't allowed—into homes and refugee camps to photograph women and families.

So do female photographers take pictures of women and children because they are inherently drawn to them as subjects? Or is it because they have better access to them to begin with?

Men Vs. Women... Who shot which?

WAR IN EUROPE: Covering the Spanish Civil War in 1937 (top), Gerda Taro photographed two Republican soldiers carrying another in the Navacerrada Pass. Having landed in France with American forces on D-Day in June 1944, Robert Capa photographed captured German soldiers (bottom) in Calvados, St. Laurent-sur-Mer.

GERDA TARO, INTERNATIONAL CENTER OF PHOTOGRAPHY/MAGNUM PHOTOS (TOP); ROBERT CAPA, CORNELL CAPA/MAGNUM PHOTOS (BOTTOM)

Viva la différence!

We're not saying that the gender of the photographer doesn't play into the picture that emerges. Obviously it does. But it matters in ways that often we can't predict.

A tapestry of actions and reactions go into the making of a photo. To reduce it to any one thing, even if that thing may be the photographer's gender, is often just, well, a reduction.

Are women more drawn to narrative and emotion? Maybe, but plenty of men are, too. Are men more drawn to technical, action-centered subjects? Possibly. But for each stereotype, you can come up with examples of photographers who defy them.

"There certainly is a clichéd female style of photography. And there's a clichéd tech dude who has 2,700 cameras and only talks about depth of field," says Cara Phillips. "But within photography, there are so many people that fit and defy stereotypes, that going there doesn't get you anywhere. Ultimately I really don't think that it's important."

After all, in the end the goal is simply to make a unique, effective—even great—photograph. Says Dennis Keeley, "Photography has that quality of honesty in it that doesn't quit. And it goes beyond the maker of the picture."

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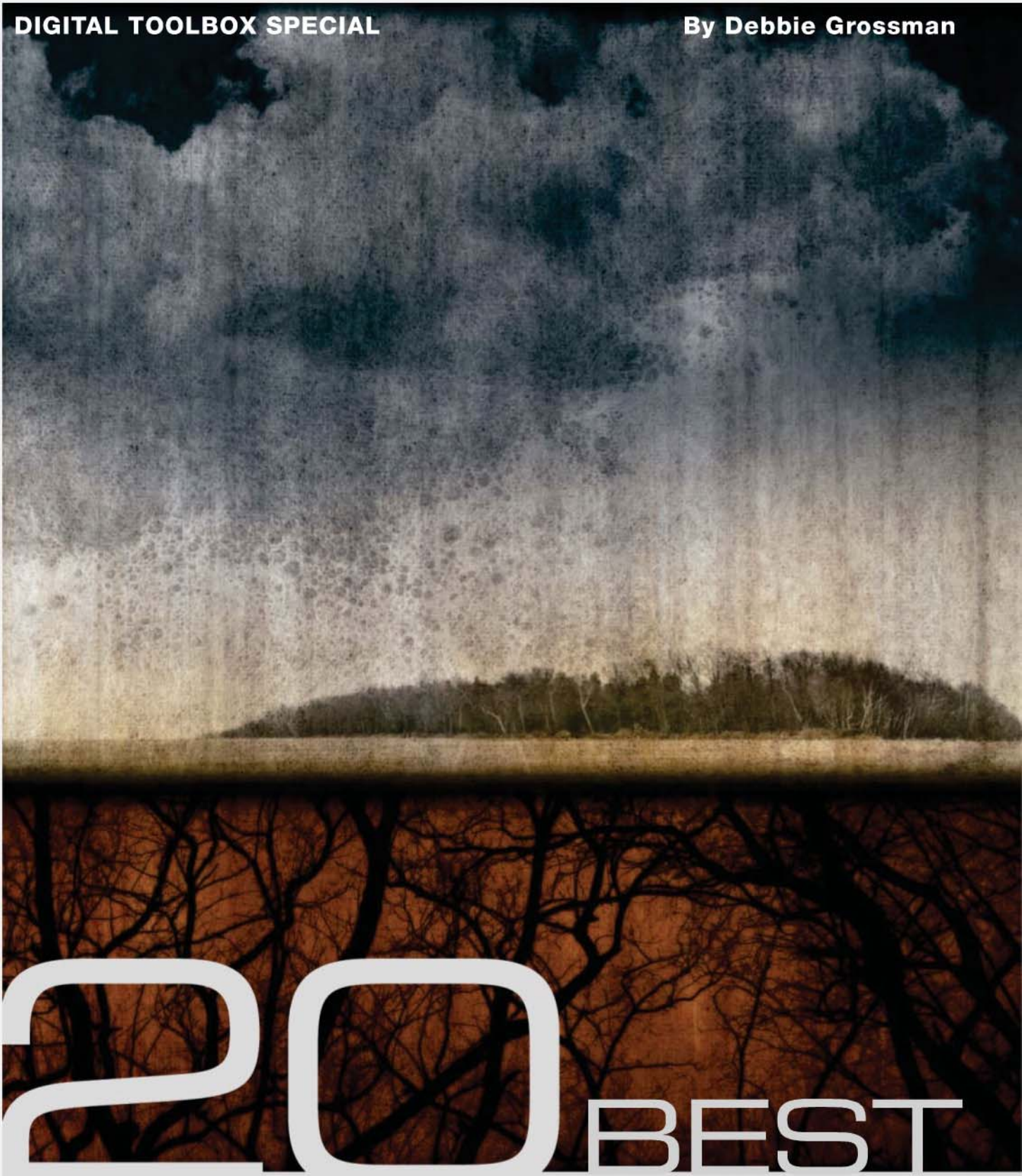
DIGITAL TOOLBOX SPECIAL

By Debbie Grossman



20 BEST PHOTOSHOP TIPS

WORK BETTER AND FASTER, WITH SECRETS FROM ADOBE PHOTOSHOP SUPERSTARS

•SHIFT FOR ACCURACY

When you want to keep things straight or constant, use the Shift key. Hold it down when you're painting a line to draw perfectly straight. Press it when drawing a shape with the rectangular or elliptical Marquee tool, and you'll get exact squares or circles. To transform an object but maintain its proportions, hold down Shift. And when you're dropping one image onto another, Shift will place it directly in the center.

•FIX BLOW-OUTS

Your highlights are unrecoverable, but you still like the picture? Keep them from looking like holes in your image by ensuring they don't print paper-white. Hit Ctrl (Command) + L to get into the Levels dialogue. Then, under Output levels, simply change the white value to 245 from 255.

•FADE A FIX

If you want to see slightly less of the change you just made, but you don't want to lower the opacity of the whole layer, fade it. Go to Edit > Fade to reduce the amount of only your last action.

•COOL DOUBLE EXPOSURE

Like the double-exposure effect? Messing with opacity is for amateurs. Instead, drag one image on top of another, then switch the top layer's Blend Mode to Screen. For a darker version, try Multiply.

JULIEANNE KOST

DIGITAL IMAGING EVANGELIST, ADOBE SYSTEMS INC.

•FAST SELECTIVE COLOR

First, make a new Black and White Adjustment Layer. Though the image appears to change to grayscale, the new layer hides the color in the original layer(s) below. Click on the mask, then paint on your image with black. This lets you hide the adjustment, revealing the color underneath. Continue painting with black until you've uncovered all the areas you want in color. Painting with gray will also hide or reveal more or less color below.

•QUICK-CHANGE BRUSHES

My favorite shortcut in Photoshop CS4: dragging and resizing cursors. With a painting tool (such as the Brush) selected, hold down Alt and right-click (Control + Option on a Mac) while dragging your mouse left or right to increase or reduce the brush size. To change the hardness, hold down Shift + Alt and right-click (on Mac add the Command button). You have to release the mouse and drag again to switch between changing the hardness and the brush size.

The author of Window Seat: The Art of Digital Photography and Creative Thinking *and the creator of the Adobe Photoshop CS training DVDs published by Software Cinema, Kost shares more tips at jkost.com.*

TIM GREY

INDEPENDENT DIGITAL PHOTOGRAPHY AND IMAGING TEACHER AND AUTHOR

•COLOR FROM ANYWHERE

When you want to use a color for text or, say, painting in your image, you can click on the foreground color swatch near the bottom of the Tools palette to bring up the Color Picker dialog box, then click within your image to select a color from the image.

You can also select a color from anything else visible on your monitor—other images, dialog boxes, even the desktop. With the Color Picker dialog box open, click in an open image and keep the mouse button down while dragging across your display. The Color Picker will reflect the color under your mouse as you move it. When you release the button, whatever color it's on will be selected.

Author of more than a dozen books on digital imaging, Grey is a member of the Photoshop World Dream Team of instructors and publishes the Digital Darkroom Quarterly *newsletter. Find him at www.timgrey.com.*

•RESIZE SMART

The Image Size dialogue gives you choices for resizing—so don't just leave it on the default setting. Under Resample Image, choose Bicubic Smoother for enlargements or Bicubic Sharper for reductions. Resizing a graphic image with lots of hard-edged shapes? Don't use Bicubic—instead choose Nearest Neighbor.

•COMBINE YOUR LAYERS

When you do a lot of retouching, layers can really pile up. When you need to see all your fixes on one layer, but don't want to flatten, highlight the top layer. Select All, then hit Ctrl (Command) + Shift + C to copy, then Ctrl (Command) + Shift + V to make a new layer that shows how the image looks when everything is merged.

•SEE THE WHOLE IMAGE

To fit the whole picture on screen, hit the Tab key to hide your panels. Then hit Ctrl (Command) + 0 on your keyboard to make your image as big as it can get. If you'd rather use your mouse, double-click on the hand tool for a full-screen view. For a black border, type the F key repeatedly.

•FIX CONTRASTY IMAGES

If you're dealing with a good image that has a little too much contrast, use the Shadow/Highlight tool to quickly mellow it out. Just increase the tone using the Amount sliders for both shadows and highlights.

JULIEANNE KOST (OPENING IMAGE)

KATRIN EISMANN

CHAIR, MASTER OF PROFESSIONAL STUDIES IN DIGITAL PHOTOGRAPHY SCHOOL OF VISUAL ARTS

•BETTER CONTRAST

Whenever you use Curves to enhance contrast on a color image, make sure to set the layer Blend Mode to Luminosity. You'll avoid undesired shifts in color and saturation.

•SUPER-SOFT SKIN

To subtly soften skin, duplicate the Background Layer and choose Filter > Other > Highpass. Use a radius of 5 pixels. Select Image > Adjustments > Desaturate and change the Layer Blend Mode to Softlight. This will sharpen the entire image. Now choose Image > Adjustments > Invert to add a wonderful softness to the image. Use a layer mask to control the effect's location.

Besides teaching at New York's School of Visual Arts (www.sva.edu/digitalphoto), Eismann has written many books, including, most recently, The Creative Digital Darkroom *with Sean Duggan.*

BOB DUKE

•REPAIR RIGHT

If you have cloning and healing to do, don't mess up the layers you've already finished. Instead, make a new layer, and grab the Healing Brush or the Clone Stamp. From the pulldown menus in the Options Bar, pick Sample: Current and Below or Sample All Layers (depending on your version of Photoshop). All your new brush strokes will hover in your new layer.

•QUICK BLACK-AND-WHITE

For a dramatic b&w, try using just one channel. To find the best, hold down the Ctrl (Command) key and type the numbers 1, 2, and 3 successively to see the Red, Green, and Blue channels. Like one the best? Go into Channel Mixer and set that one to 100%. Leave the other two at zero, check monochrome, and click OK.

•GET GREAT EYES

For a portrait that pops, use the Lasso, set slightly feathered, to select the eyes. Hit Ctrl (Command) + J to copy them to a new layer and use Levels or Curves to add a touch more contrast to them. Then sharpen them slightly with Smart Sharpen. If the effect is too much, drag down the layer's opacity.

•FIX COLOR RIGHT

When your color is bad but you don't know how to improve it, go to Image > Adjustments > Variations and check out previews of your image with different color casts. When you have a sense of what looks best, head to Curves to do the job right.

•SEE YOUR TYPE

When you're adding text to a photo, you often need to adjust the type size, font, and color. But highlighting it can get annoying when you're trying to see the final product. To hide the highlighting, hit Ctrl (Command) + H. The text will still be selected, but you can make your changes much more easily. The same command, by the way, works to hide the "marching ants" that indicate a selected area.

DEKE MCCLELLAND

CREATOR, ONE-ON-ONE BOOK SERIES

•PRINT-SIZE SECRET

My favorite new feature of Photoshop CS4 is great for judging how your image will look in print, and it's particularly useful for gauging sharpening. Look at your display settings to determine the width of your screen in pixels. Using a ruler (a real one), measure the width of the imageable area, and divide the pixels by the inches. That's your screen resolution. In Photoshop, open Preferences, go to Units and Rulers, enter that value into the Screen Resolution field. Click OK. Then choose View > Print Size. It's now rendered accurately thanks to support for OpenGL.

A member of the Photoshop World Dream Team of instructors, McClelland has written more than 80 books, the most recent of which is Adobe Photoshop CS4 One-on-One. *Find him at www.deke.com.*

KEVIN O'CONNOR

RUSSELL WILLIAMS

CHIEF ARCHITECT, PHOTOSHOP, ADOBE SYSTEMS INC.

•THE BEST ZOOM

When I want to zoom in on an area, I never click the Zoom tool. I hold down Ctrl + Spacebar (Command + Spacebar on a Mac) and draw a rectangular selection around the thing I want to look at. The screen fills with the exact area I want blown up. In CS4, this works even for a critical look, because zooming in to, say, 127.5% still gives a sharply rendered view.

As an architect of Photoshop, Williams has written key aspects, including Actions and batch file handling, color management, color pickers, and memory management.

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COMFORT Zone

Get it all, without going to extremes

Pity the Canon EOS 50D. Between the hoopla about the latest full-frame juggernauts from Nikon, Sony, and Canon itself, and the buzz on the debut of the Micro Four Thirds system, it's easy for an impressive new advanced-amateur DSLR to get overlooked.

But for those of us who are serious about our photography and aren't ready to step into a full-frame system, there's a lot to recommend this new 15.1MP DSLR ($1,400, street, body only; $1,600 with 28–135mm f/3.5–5.6 EF IS lens; $2,100 with 18–200mm f/3.5–5.6 EF-S IS lens).

As our tests in the Pop Photo Lab prove, this isn't just an EOS 40D with a megapixel boost.

Granted, the 50D and 40D share the same body and many features; both have APS-C-sized CMOS sensors (1.6X lens factor); and they even use the same BG-E2N battery grip ($190, street). But as if to underscore the differences, the 10.1MP 40D stays in the Canon line ($950, street, body only).

So what's the big change? Aside from more megapixels, it's the DIGIC 4 processor, with ISOs up to 12,800, in-camera vignetting correction, and three sizes of RAW files.

◀ ON THE BACK: While dominated by a 3-inch LCD and very handy command wheel, the small extras—an easy-to-use joystick, a live-view access button next to the viewfinder—are welcome touches.

To give you an idea of the processor's power, even though the 50D packs 5MP more than the 40D, its burst rate is 6.3 frames per second, close to the 40D's 6.5 fps. And the 50D shoots at full tilt for up to 90 large Fine-quality JPEGs or 16 RAW files when you use a UDMA CompactFlash card, according to our

WHAT'S HOT

- 15.1MP APS-C sized CMOS sensor.
- ISO 100–6400, extendable to ISO 12,800.
- Very accurate color.

WHAT'S NOT

- Noisy at ISO 12,800.
- Noisier than the EOS 40D at middle ISOs.
- No wireless flash control via the pop-up.

WHO'S THIS FOR?

- Canon shooters who want more power than a Rebel, but don't need (or want to pay for) a full-frame camera, such as the 5D Mark II.

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Monopod	55.11"	18.75"	11 lbs	10 oz.	$89.95
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▲IMAGE QUALITY: This midday scene has too much dynamic range for a DSLR to capture, but the 50D's metering exposed nicely for the shadows, and accurate color did justice to the signs. Shot with 18–200mm f/3.5–5.6 EF-S IS lens. Exposure, 1/80 sec at f/22, ISO 1000.

tests. With an old-fashioned CF card, expect up to 60 JPEGs.

The DIGIC 4 also gives you Canon's Auto Lighting Optimizer and Peripheral Illumination Correction. The first adjusts brightness and contrast for images that might not be perfectly exposed when you shoot them. The second lets you load the camera with technical data for as many as 40 EF lenses and then minimizes any vignetting that a particular lens might have.

The new processor also detects up to 35 faces in a shot when shooting in live view. But it doesn't do anything for autofocus in live view. With slow contrast-detection AF, this remains a clunky experience.

Familiar feel

If you liked the design of the 40D, or for that matter, the 30D, you'll love the 50D. The well-proven approach puts a mode dial on the top left, with six scene modes for less experienced shooters and two custom modes for advanced types. On the right, there's the status LCD, along with three buttons for metering, white balance, AF, drive mode, ISO, and exposure compensation. Three buttons controlling six functions? Yes, because the 50D has two scroll wheels: one next to the shutter button, and a larger one on the camera back.

Despite 10 buttons, two wheels, an on/off switch, and a tiny joystick, the 50D isn't cluttered. There's even room to comfortably place your thumb. And the camera is contoured for a solid grip while you twist it in whatever direction you need.

Advanced shooters might complain about the single CF slot instead of the dual slots found on Nikon's D300 ($1,560, body only). But no one will gripe about the 50D's hot-shoe. With a nifty plastic ridge that mates with Canon's latest flash units, this shoe forms a tighter seal and battles dust and moisture better than older models.

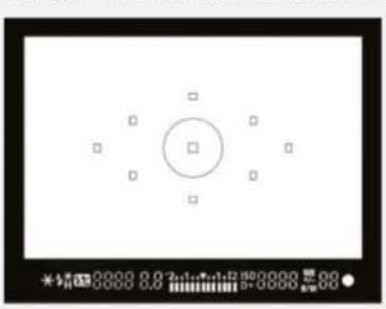
While the 50D's LCD measures a familiar 3 inches, it steps up to 920,000 dots from the 40D's 230,000. Gorgeous! The viewfinder remains at 95-percent accuracy and 0.96X magnification, both Excellent scores by our measure.

Tale of the tests

In our lab, the 50D scored well, with an Excellent rating in overall image quality right up through ISO 1600 that

VITAL STATISTICS

IMAGING: 15.1MP effective, APS-C-sized CMOS sensor (1.6X lens factor) captures images at 4752x3168 pixels with 14 bits/color in RAW mode. **STORAGE:** Single CompactFlash Type I/II including UDMA; Microdrives. Stores JPEG, RAW, RAW + JPEG files. **BURST RATE:** Full-sized JPEGs (Fine mode): Up to 90 shots at 6.3 fps. RAW: Up to 16 shots at 6.3 fps. (Both tested using UDMA CF card.) **AF SYSTEM:** TTL phase detection with 9 illuminated focus points (all cross-type). Single-shot and continuous AF with Predictive AI Servo focus tracking. Tested sensitivity down to EV –2 (at ISO 100, f/1.4). **LIVE VIEW:** TTL phase detection and contrast detection modes. **SHUTTER SPEEDS:** 1/8000 to 30 sec plus B (1/3-, 1/2-, or 1-EV increments). 100,000-cycle rating. **METERING:** 35-zone TTL metering, Evaluative, Centerweighted, Partial (approx. 9% of viewfinder), and spot (approx. 3.8% of viewfinder). EV 1–20 (at ISO 100). **ISO RANGE:** Normal, ISO 100–3200 (in 1/3 EV increments); expanded, ISO 6400 and 12,800 (in 1-EV increments). **FLASH:** Built-in pop-up unit, GN 43 (in feet at ISO 100), covers angle of view of 17mm lens. X-sync at 1/250 sec. **VIEWFINDER:** Fixed eye-level pentaprism. **LCD:** 3-in. TFT with 920,000-dot resolution, 160-degree viewing angle. **OUTPUT:** Hi-Speed USB 2.0, HDMI (mini-type) video, GPS. **BATTERY:** Rechargeable BP-511A Li-ion; CIPA rating: 640 shots. **SIZE/WEIGHT:** 5.7x4.2x2.9 in., 1.72 lb with card and battery. **STREET PRICE:** $1,400, street, body only; $1,600 with EF 28–135mm f/3.5–5.6 IS USM lens; $2,100 with EF-S 18–200mm f/3.5–5.6 IS lens. **FOR INFO:** www.canoneos.com.



VIEWFINDER TEST

ACCURACY: 95% (Excellent)
MAGNIFICATION: 0.96X (Excellent)

dropped only to Extremely High at ISO 3200 and 6400. We saw a marked improvement in color accuracy over the 40D. Both scored Excellent, but the 50D served up an average Delta E of 6.6, versus the 40D's 7.7.

Resolution? Also Excellent, with a score of 2420 lines at ISO 100. At ISO 3200 it stood strong with 2232 lines. By ISO 12,800, resolution dropped off noticeably, sinking to 1997 lines.

Early adopters have complained about the 50D's noise levels. While they have a point, let's not overstate the issue. The 50D performed well overall in our noise tests and handily beat its predecessor at higher ISOs. For example, at ISO 1600, the 50D scored 1.7 for a Low rating, while the 40D produced slightly more noise (2.0) and earned a Moderately Low rating. At ISO 3200, the 50D rated Moderately Low at 2.2, while the 40D scored 2.9 for a Moderate rating.

That said, there are some nuances. First, the new camera underperformed the 40D at the lower ISOs. At ISO 100, with a score of 1.1, it barely made it into the Extremely Low category, compared with 0.8 (also Extremely Low) for the 40D, which maintained its Extremely Low rating through ISO 200. The pattern continued until the two reached parity at ISO 800 (1.5, Very Low).

The way noise manifests itself at higher ISOs is another issue. At the top two settings, we saw bands of noise stretching across the image—not something photographers usually see from a Canon. At least the 50D still gives you a full stop more usable sensitivity than the 40D, which topped out at ISO 3200 and was noisier at that point than the 50D is at ISO 6400.

Finally, the "extended" ISO of 12,800 may have raised expectations too high. The 50D is so noisy at that setting that it may be more of a tease than a useful feature. In our test, noise hit 4.13, an Unacceptable rating. Canon perhaps would've been wise to limit ISO to 6400. Since Nikon has been so successful at extending the ISO range in the D700 and D3, though, Canon probably felt the need to extend to ISO 12,800. But it wasn't necessary; both the Nikon D300 and D90 top out at ISO 6400, where in our noise test the EOS 50D beat them both.

◀ON THE TOP: The line of dual-purpose buttons in front of the status display lets you adjust all the most vital settings by scrolling either the command wheel on top or the one on the back.

CERTIFIED TEST RESULTS

IMAGE QUALITY (ISO 100–1600)

EXCELLENT

POOR ⟷ EXCELLENT

IMAGE QUALITY (ISO 3200–6400)

EXTREMELY HIGH

POOR ⟷ EXCELLENT

RESOLUTION (ISO 100)

EXCELLENT 2420

1500 2000 2500 3000 3500 4000

HIGH ⟷ EXCELLENT

COLOR ACCURACY (AVG. DELTA E)

EXCELLENT 6.6

14 12 10 8 6

HIGH ⟷ EXCELLENT

NOISE AT ISO

1.10 EXTREMELY LOW	100
1.28 VERY LOW	200
1.6 LOW	400
1.5 VERY LOW	800
1.73 LOW	1600
2.20 MODERATELY LOW	3200
2.58 MODERATE	6400
◀4.13 UNACCEPTABLE	12,800

3.0 2.5 2.0 1.5 1.0 0.5

UNACCEPTABLE ⟷ EXTREMELY LOW

HIGHLIGHT/SHADOW DETAIL

HIGH

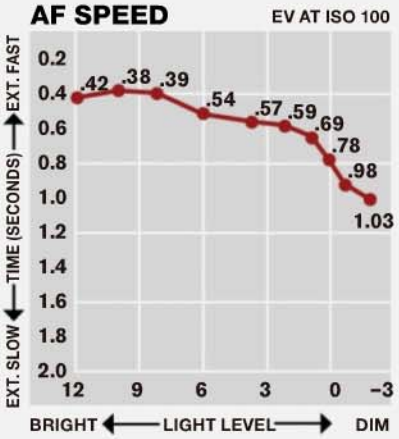
LOW ⟷ EXT. HIGH

CONTRAST (AT DEFAULT SETTING)

SLIGHTLY HIGH

LOW ⟷ HIGH

AF SPEED EV AT ISO 100



(For our noise tests, we process RAW files in the manufacturer's RAW converter, applying the default amount of noise reduction during conversion, unless otherwise noted.)

Focus remix

Since Canon kept the same 9-point AF system as in the 40D, it's no surprise that the 50D yielded very similar results in our AF test. In very bright light, the camera focuses in about 0.4 sec, slowing to about 0.6 sec in moderate light levels. Focusing requires less than 1 sec down to EV –1, and slows to 1.03 sec at our test's lowest light level of EV –2 (about the same as the light of a full moon).

Metering? As in the 40D, a 25-zone TTL system. Choose from evaluative metering linked to any AF point, centerweighted, partial (center 9 percent of the viewfinder), or spot. At 3.8 percent of the frame, the 50D's spotmetering is broader than we'd like. Still, the camera does a nice job of determining the proper exposure for a scene.

Overall, an impressive DSLR for the money. There are no awe-inspiring bells or whistles, and the one attempt at that (ISO 12,800) doesn't meet expectations. But is the 50D a solid machine that can turn out beautiful images? Absolutely. And does it offer enough flexibility to create pleasing images all the way up to ISO 3200, and even ISO 6400? Definitely.

Put simply, this is far more than a mere upgrade—it's a camera you shouldn't overlook.

COMPETITIVE SET

■NIKON D300 ($1,560, body only; $1,910 with 18–200mm f/3.5–5.6G ED-IF AF-S DX VR II lens) At 12.3MP, Nikon's D300 loses the megapixel race to the Canon 50D. Both have excellent color accuracy and resolution in our lab tests. The D300 beats the 50D in autofocus, focusing faster in low light. Even at EV –2, the D300 focuses in under 1 second, while the 50D took 1.03 second. Note that Nikon packs 51 AF points to make that happen. Those 51 points cover a larger portion of the viewfinder and the D300's 99-percent-accurate finder beats the 50D's 95-percent accuracy. The D300's benefits, however, push its price higher than the 50D.

■SONY ALPHA 700 ($1,300 body only; $1,400 with 18–70mm f/3.5–5.6 DT lens; $1,800 with 16–105mm f/3.5–5.6 DT lens) With 12.2MP, the A700 also trails the 50D a bit in pixel count. It also doesn't match the 50D's color accuracy. But in bright and moderate light, the Sony focuses significantly faster than the 50D. Above ISO 400, the 50D shows lower noise. At ISO 400 and below, the two cameras turn in similar noise performance. Ultimately, these two are very evenly matched. Though the Sony doesn't include live view and has a slightly slower burst rate of 5 fps, it includes sensor-shift image stabilization that'll work with any lens. Canon and Nikon make you buy special lenses to get that shake-beating feature.

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By Julia Silber

ZOOMThis!

Canon 18–200mm f/3.5–5.6 EF-S IS AF

A 29–320mm equivalent on

APS-C Canon EOS models, this lens ($700, street) boasts the broadest zoom range of any interchangeable optic from Canon to date: 11X.

A high-end kit option for EOS 50D owners, it probably owes its existence to the phenomenal success of Nikon's 18–200mm f/3.5–5.6 VR Nikkor. And with the debut of Tamron's far-reaching and stabilized 18–270mm f/3.5–6.3 lens (tested in this issue), an 11X Canon may be just the beginning.

Two glass-molded aspheric elements and two Ultra-low Dispersion (UD) elements control spherical and chromatic aberrations, respectively. And this new lens is internal-focusing, with only four of its 16 elements used to focus. Because these internal elements are significantly smaller than the nonrotating front elements, the lens focuses faster, drains less battery power, and also accepts filter-ring-mount accessories.

The Image Stabilizer includes auto panning detection—when you pan during a shot, it turns off the IS along either the horizontal or vertical axis, depending on camera orientation.

HANDS ON: About average in size and weight, the lens sports a large zoom ring that's ribbed, rubberized, and smooth-turning. The relatively small manual-focusing collar—ribbed and made of hard plastic—turns with a loose, underdamped, and slightly scratchy feel. Somewhat more rugged than the average kit zoom, it has a metal (not plastic) lensmount, with focusing and stabilizer switches that fall directly under your left thumb as you hold the camera at eye-level.

On our test camera, the Rebel XS, autofocus was fast, moderately quiet, and accurate, and the lens was compact enough to throw no shadow when used with the camera's built-in flash, except when focused close at the widest zoom settings.

IN THE LAB: On the optical bench, the lens delivered Excellent-range SQF performance at the three tested focal lengths, indicating glass of uncompromising sharpness and contrast. At 200mm, its SQF numbers trumped Nikon's, which topped out only in the Good range, two levels down. (Like the Canon, Sigma's 18–200mm f/3.5–5.6 OS lens also showed uniformly Excellent resolving power.)

DxO Analyzer 3.0.1 tests of distortion control found Visible-range barrel distortion at 18mm (0.75%), plus Slight pincushioning at 100mm (0.23%) and 200mm (0.20%). The performance, about what we expected, roughly equaled that of the Nikon and was slightly below the Sigma's.

Light falloff was gone from the corners by f/5 at 18mm, f/6.3 at 100mm, and f/8 at 200mm. Both the Nikon and Sigma lenses fared somewhat better—some focal lengths showed no vignetting whatsoever.

By kit lens standards, the Canon is notable for its close-up powers. At the tight, uniform close-focusing distance of approximately 15.75 inches, magnification ratios ranged from 1:16.9 at 18mm to a gratifying 1:3.16 at 200mm—significantly stronger than the Nikon's 1:3.9 and almost equal to the Sigma's 1:3. Tests of the IS system found gains of between 2.5 and 3 stops in sharp shutter speeds for three testers—not quite up to Canon's 4-stop claim, but par for this course.

CONCLUSIONS: In the past two years, the 11X IS superzoom has become the ideal general-purpose lens—certainly for shooters whose cameras don't have on-board shake reduction. This Canon fits the mold. Very light and compact, it's a gracious and adaptable traveling companion. Impressively sharp, it's also an obvious choice for handheld low-light pictures, including event and theater work. Its real fortes, however, are close-up macro subjects, distant wildlife, and almost everything in between. Sports? Go for it!

Specifications

18–200mm (17.69–199.05mm tested), f/3.5–5.6 (f/3.31–n.a.* tested), 16 elements in 12 groups. Focusing turns 60 degrees counterclockwise. Zoom ring turns 80 degrees clockwise. Focal lengths marked at 18-, 24-, 50-, 80-, 135-, 170-, and 200mm. ■ **Diagonal view angle:** 74–7 degrees. ■ **Weight:** 1.39 lb. ■ **Filter size:** 72mm. ■ **Mounts:** Canon AF. ■ **Street price:** $700.

*Tested measurement not available due to instrument limitation.

Subjective Quality Factor

	Size	5x7	8x10	11x14	16x20	20x24
18MM	3.5	95.5	94.2	91.0	84.4	76.3
	4.0	95.5	94.3	91.0	84.6	76.6
	5.6	95.5	94.2	90.9	84.1	75.7
	8.0	95.6	94.2	91.0	84.3	76.0
	11.0	95.4	94.1	90.7	83.8	75.2
	16.0	95.4	94.0	90.6	83.8	75.6
	22.0	95.9	94.9	91.7	86.0	79.1
100MM	Size	5x7	8x10	11x14	16x20	20x24
	5.6	95.5	94.7	91.7	85.9	78.8
	8.0	95.2	93.9	92.3	87.1	80.9
	11.0	95.1	93.5	92.8	88.2	82.9
	16.0	95.4	94.1	92.7	87.9	82.4
	22.0	95.3	94.7	91.8	86.6	80.4
	32.0	95.3	93.5	89.8	81.9	72.0
	36.0	94.9	93.3	89.5	81.2	70.7
200MM	Size	5x7	8x10	11x14	16x20	20x24
	5.6	95.4	94.0	90.6	83.6	74.8
	8.0	95.5	94.3	90.9	84.1	75.6
	11.0	95.6	94.3	91.1	84.6	76.6
	16.0	95.5	94.2	91.0	84.6	76.8
	22.0	95.3	93.8	90.3	83.1	74.2
	32.0	95.3	93.2	92.5	87.6	81.8
	36.0	95.2	93.2	92.6	87.9	82.5

key

A+	A	B+	B	C+	C	D	F

By Philip Ryan

FeatINInches

The incredible shrinking camera

▲**ON THE BACK:** The articulated 3-inch LCD monitor lets you frame your shot easily from any angle, and the buttons next to it give you quick access to functions such as metering and AF mode. Camera is shown actual size.

WHAT'S HOT
- Size.
- Extremely high resolution and accurate color.
- Best EVF we've ever seen.

WHAT'S NOT
- Noisy at higher ISOs.
- AF quirky in low light.
- Few lenses available yet.

WHO'S THIS FOR?
- Anyone who wants a small camera with interchangeable lenses that's more responsive and has better image quality than a compact or superzoom.
- Tech fans who don't mind dropping some cash for a first-of-its-kind camera.

Panasonic's new Lumix DMC-

G1 isn't a DSLR. Yes, you can remove the lens, and the camera's $800 street price (with 14–45mm f/3.5–5.6 kit lens) makes it more expensive than some entry-level DSLRs. But this tiny interchangeable-lens electronic-viewfinder model represents an entirely new class of camera.

The G1 is the vanguard of the Micro Four Thirds system, a format meant to bridge superzoom EVFs and DSLRs. The idea: To grab people who want the resolution of a DSLR but the simplicity, small size, and nonthreatening look of an EVF or compact.

The G1 (as with all Micro Four Thirds cameras scheduled to follow) has a DSLR-sized Four Thirds sensor, which captures more detail than the tiny chip inside any superzoom. It's also engineered to be smaller than a typical DSLR and super-easy to operate. And to prove it's not intimidating—even fun—it comes in colors (red and blue), as well as black.

What's the small idea?

A collaboration between Panasonic and Olympus, this new camera and lens system uses a lensmount that's smaller than the one on regular Four Thirds DSLRs from Olympus and Panasonic. With Micro Four Thirds, the distance from the back of the lens to the image sensor is shorter—there's no allowance for a mirror box and thus no optical viewfinder.

The design also permits relatively tiny lenses, even with lens-based image stabilization. Compared with DSLR glass, Micro Four Thirds optics are about half the size for an equivalent focal length. And as with Four Thirds cameras, there's a 2X lens factor.

By EVF standards, the imaging sensor inside a Micro Four Thirds camera is gigantic. A typical superzoom EVF's chip has a diagonal measurement that's less than half of a Micro Four Third sensor's. What does this mean for you? The possibility of slimmer camera bodies that maintain the resolution and versatility of interchangeable lenses.

The G1 operates very similarly to other EVF cameras: You frame the image using either the 3-inch 460,000-dot LCD or the 1,440,000-dot (equivalent) electronic viewfinder. Much like a digital projector, this EVF rapidly combines separate red, green, and blue frames to

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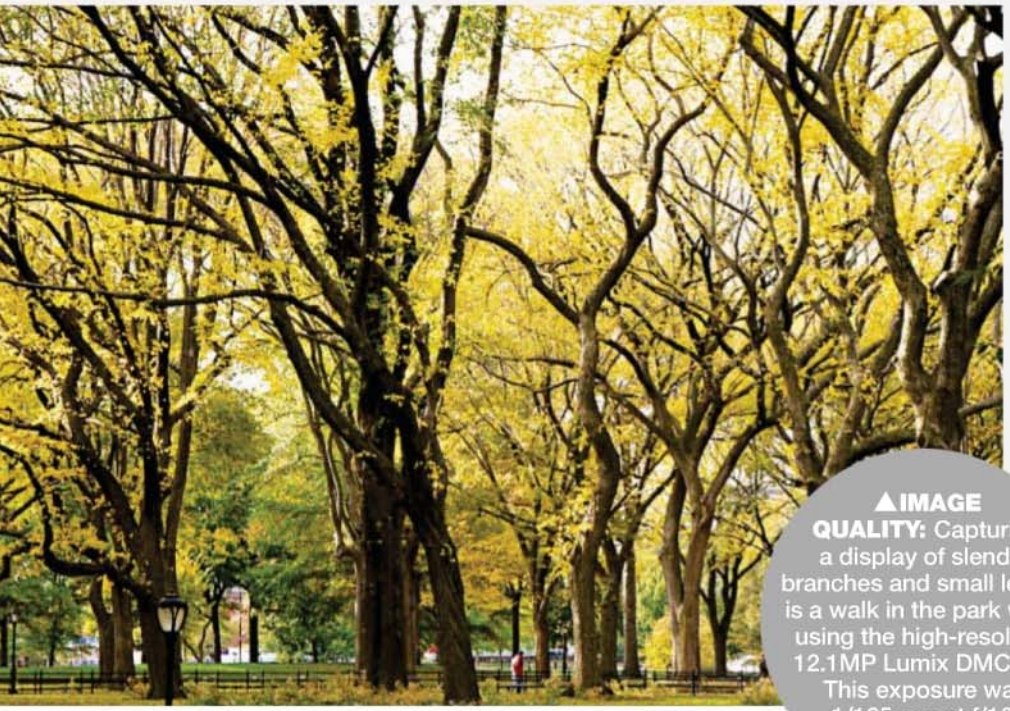

▲IMAGE QUALITY: Capturing a display of slender branches and small leaves is a walk in the park when using the high-resolving 12.1MP Lumix DMC-G1. This exposure was 1/125 sec at f/16, ISO 640.

create a full color image that refreshes at 60 frames per second.

The result? The highest-resolution EVF we've seen in a still camera. It still blanks out during burst mode, making it difficult to pan along with a moving subject. But it's bright and impressively detailed. The LCD tilts and swivels to make low- and high-angle shooting easier. When focusing manually, both the EVF and LCD zoom in on your subject automatically, as soon as you start turning the focusing ring on the lens. That's an advantage no optical finder can match.

Size matters

While our editors like the DSLR-style body, it's not much smaller than the less-expensive Olympus E-420 ($448, street, with 14–42mm f/3.5–5.6 Zuiko ED lens) or Pentax K2000 ($700, street, with 18–55mm f/3.5–5.6 and AF200FG hot-shoe flash). The G1 measures 4.9x3.3x1.8 inches. That's less than a half-inch smaller than the E-420 in each direction. Doesn't seem like enough *in itself* to warrant a new system.

The G1 is really just a proof of concept. For instance, it doesn't shoot video, though Panasonic strongly hints that the next version will capture high-definition video.

VITAL STATISTICS

IMAGING: 12.1MP effective, Live MOS Four Thirds sensor captures images at 4000x3000 pixels with 12 bits/color in RAW mode. **STORAGE:** SD/SDHC cards. Stores JPEG, RAW, RAW + JPEG. **BURST RATE:** Full-sized JPEGs (Extra Fine mode), up to card capacity at 3 fps; RAW, up to 7 shots at 3 fps. **AF SYSTEM:** TTL contrast detection with 23 focus areas and adjustable size single-area focusing. Face detection, single-shot and continuous AF. **SHUTTER SPEEDS:** 1/4000 to 60 sec plus B (1/3-EV increments). **METERING:** TTL metering with 144-zone Intelligent Multiple (a.k.a. evaluative), centerweighted, and spotmetering. EV 0–18 (at ISO 100). **ISO RANGE:** ISO 100–3200 (in 1/3-, 1/2-, or 1-EV increments). **FLASH:** Built-in pop-up flash GN36 (in feet at ISO 100). Supports TTL autoflash with Panasonic Lumix flashes; X-sync at 1/160 sec. **VIEWFINDER:** Electronic viewfinder with 1,440,000-dot equivalent. **LCD:** Fully articulated 3-in. TFT with 460,000-dot resolution. **OUTPUT:** Hi-Speed USB 2.0, HDMI (mini-type) video, NTSC/PAL composite. PictBridge compatible. **BATTERY:** Rechargeable DMW-BLB13PP Li-ion; CIPA rating, 330 (LCD) or 350 (EVF) shots. **SIZE/WEIGHT:** 4.9x3.3x1.78 in., 0.85 lb with card and battery. **STREET PRICE:** $800 with Lumix G Vario 14–45mm f/3.5–5.6 Mega O.I.S. lens. **FOR INFO:** www.panasonic.com.

VIEWFINDER TEST

ACCURACY 100% (Excellent)
MAGNIFICATION 0.7X (Acceptable)

◀**ON THE TOP:** A four-way switch for drive mode, along with a dial for focus mode and clickable command wheel, keep the controls simple.

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TEST PANASONIC LUMIX DMC-G1

Controls are, for the most part, well placed, with a decent number of switches, dials, and buttons. A four-way switch next to the mode dial and behind the shutter button lets you choose the drive mode, while a tiny dial on the top changes the focus mode. A cluster of buttons next to the LCD offers quick access to ISO, AF mode, white balance, and metering. A Quick Menu button takes you to image size and aspect ratio, while the Film Mode button gives you various color and black-and-white looks.

We really like the clickable scroll wheel in front of the shutter button. Just press it to get to exposure compensation, and again after dialing how much comp you want. Once our testers got the hang of it, adjusting exposure was fast and easy.

For those who want simplicity—and the backers of this system count them in the millions—there are lots of scene modes, as well as Intelligent Auto, which chooses a scene mode and ISO for you, and even adjusts brightness to bring out details in shadows or highlights.

Lab report

In our lab tests, the G1 yielded a mixed bag. Color accuracy: an Excellent rating with an average Delta E of 6.21. That's noticeably better than Sony's $3,000 (street, body only) full-frame Alpha 900, which scored an average Delta E of 9.

Viewfinder accuracy: 100 percent. That's a benefit of the electronic viewfinder. On the downside, the viewfinder magnification is just 0.7X. For comparison, the Olympus E-420 scored a 0.93X magnification in our lab test.

Resolution is where the G1 soars. Its 12.1MP sensor captured 2370 lines of resolution at ISO 100. That's better than Nikon's 12.3MP D300, with 2350 lines. You can't expect *that* from a compact camera. Canon's 12MP PowerShot G9 tops out with 2150 lines at ISO 80.

Noise didn't fare as well. At its lowest ISOs, the G1 kept noise to Extremely Low levels, scoring 0.6 at ISO 100. Up to ISO 400, noise remains at Extremely Low and Very Low levels. At ISO 800 noise steps up, scoring 2.03 and pushing it into our Moderately Low range. At ISO 1600 and ISO 3200, it ranks Unacceptable, as noise jumps to 3.8 and 7.5, respectively. Panasonic's own L10 DSLR scored 2.98 at ISO 1600 and doesn't include ISO 3200 at all. Maybe the G1 shouldn't, either.

CERTIFIED TEST RESULTS

IMAGE QUALITY (ISO 100–400)
EXCELLENT
POOR ⟷ EXCELLENT

IMAGE QUALITY (ISO 800)
EXTREMELY HIGH
POOR ⟷ EXCELLENT

RESOLUTION (ISO 100)
EXCELLENT 2370
1500 2000 2500 3000 3500 4000
HIGH ⟷ EXCELLENT

COLOR ACCURACY (AVG. DELTA E)
EXCELLENT 6.21
14 12 10 8 6
HIGH ⟷ EXCELLENT

NOISE AT ISO
0.6 EXTREMELY LOW 100
0.7 EXTREMELY LOW 200
1.3 VERY LOW 400
2.0 MODERATELY LOW 800
◀3.8 UNACCEPTABLE 1600
◀7.5 UNACCEPTABLE 3200
3.0 2.5 2.0 1.5 1.0 0.5
UNACCEPTABLE ⟷ EXTREMELY LOW

HIGHLIGHT/SHADOW DETAIL
HIGH
LOW ⟷ EXT. HIGH

CONTRAST (AT DEFAULT SETTING)
SLIGHTLY LOW
LOW ⟷ HIGH

Anyone who knows autofocus systems might cringe when hearing that the G1 uses a contrast-detection system instead of the phase-detection used in most DSLRs. Phase-detection uses some of the light that lands on an SLR's mirror. Since Micro Four Thirds cameras don't have mirrors, they can't use that system. Instead, the light goes straight through to the sensor where the contrast system kicks in. Typically, a slow-to-focus headache. Yet the G1 has overcome the usual problems, producing the fastest contrast-detection AF system we've ever used.

In the brightest portions of our AF tests (EV 8–12), the G1 focused in less than 0.5 sec. In fact, at EV 12, it focused in just 0.38 sec. That beats the

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Lumix L10, with its 0.51 sec at EV 12.

At lower light levels, the G1 slows down quite a bit, though—and here the AF behaved in a way that prevented us from running our usual AF tests. Panasonic rates the AF as effective down to EV 0. In our field testing, the camera focused in lower light than that, but the AF became sluggish and unreliable—the camera tends to ignore the area you selected to focus on and instead widens the area in a desperate attempt to lock onto something. While you lose precision in low light, Panasonic has managed to make contrast AF a viable alternative to phase AF in many situations.

Glass half full?

As a brand-new system, Micro Four Thirds doesn't offer much in the way of lenses…yet. So far, you're limited to the 14–45mm kit lens and a 45–200mm f/4–5.6 (both image-stabilized). Between those two, you get an equivalent focal-length range of 28–400mm, but this system will need some faster glass if it's to succeed.

Panasonic promises a handful of new lenses later in 2009, and we expect more optics as Olympus and third-party lensmakers, such as Sigma, become involved.

In the meantime, Panasonic offers an adapter that lets you use original Four Thirds lenses on a Micro Four Thirds body. But relatively few Four Thirds lenses are compatible with contrast AF, which means you'll have to focus manually. Also, standard Four Thirds glass is so much larger than Micro Four Third lenses that you'll lose the compactness that's a major selling point of the new format.

As a proof of concept, the G1 succeeds. It's a good camera that outperforms most compacts, delivering lots of detail, accurate colors, and when shooting in enough light, extremely high quality images. The biggest downfall? Price. It's hard to justify spending so much when a DSLR is only slightly larger and a lot less money.

But once HD video capture is built into a Micro Four Thirds model, and the size and price shrink even a little, the equation could change. And that has the potential to shake up photography in a very big way.

LENS TEST

By Julia Silber

DOWNSize

Lumix 14–45mm f/3.5–5.6 G Vario Mega O.I.S.

With the Micro Four Thirds' 2X lens factor, this kit zoom is a 28–90mm equivalent on the Panasonic Lumix DMC-G1, for a nice general-purpose focal-length range. In addition, Panasonic offers a $350 (street) 45–200mm f/4–5.6 (90–400mm equivalent) and promises more Micro Four Thirds glass later in 2009.

Specifications 14–45mm f/3.5–5.6 (not tested due to instrument limitations), Mega O.I.S., 12 elements in 9 groups. Focusing turns 90 degrees clockwise. Zoom ring turns 40 degrees clockwise. Focal lengths marked at 14-, 18-, 25-, 35-, and 45mm. ■ **Diagonal view angle:** 75–27 degrees. ■ **Weight:** 0.43 lb. ■ **Filter size:** 52mm. ■ **Mounts:** Micro Four Thirds. ■ **Included:** Lenshood. ■ **Street price:** Available only in kit with the G1 body.

Since it focuses internally, the front element stays fixed, making it easy to use filters in the 52mm filter ring. Of its 12 lens elements, arranged in 9 groups, one is aspherical to combat spherical aberrations. The Mega O.I.S. optical image stabilization has three modes, though there's only an on/off switch on the lens. To change IS mode, you have to use a menu in the camera. One mode activates stabilization when the shutter is half-pressed, another when it's fully pressed, and the third stabilizes just in the vertical axis for panning.

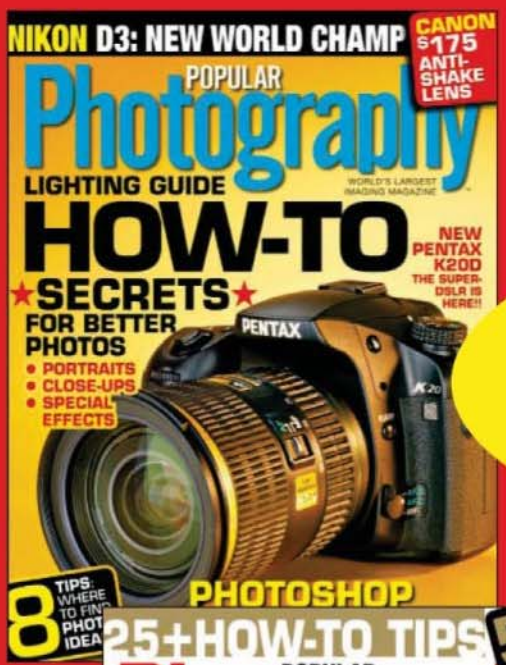
SIZE CHART: Micro Four Thirds 14–45mm (top) vs. an equivalent Four Thirds lens.

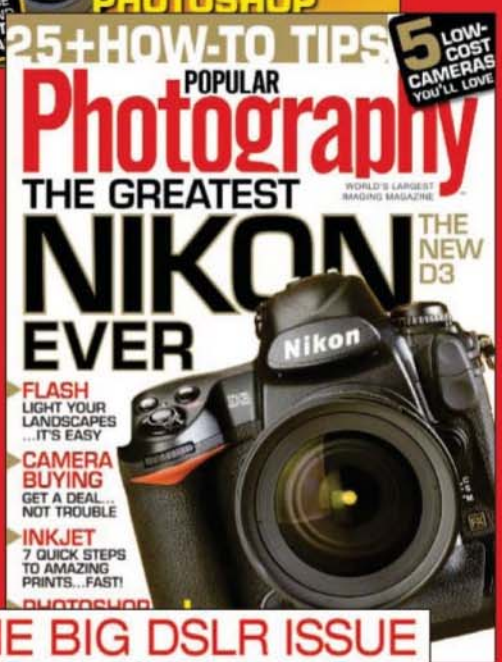
HANDS ON: The lens is small—just 2.36 inches long. Compare that with 3.38 inches for Olympus' Zuiko Digital 14–45mm f/3.5–5.6 for regular Four Thirds cameras. It's light, too—0.43 pound versus 0.63 for the Olympus.

Although the zooming action is well damped, turning on the focusing ring is a bit scratchy.

IN THE LAB: Our test bench couldn't yet provide SQF data for this brand-new format, but given the high resolution the G1 scored with this lens, we know it's sharp. In DxO Analyzer 3.0.1 tests, we recorded only Slight barrel distortion (0.17%) at 14mm, Slight barrel (0.16%) again at 25mm, and Imperceptible barrel (0.02%) at 45mm. Light falloff was gone by f/5 at 14mm and 25mm, and f/6.3 at 45mm. Close-focus distance was 8.75 inches at 14mm, 9.5 inches at 25mm, and 10.75 inches at 45mm. Magnification ratio: 1:11.04 at 14mm; 1:6.72 at 25mm; and 1:4.83 at 45mm. With the lens racked out to 45mm and IS in Mode 1, our testers averaged between 2 and 2.5 stops of handholding gain.

CONCLUSIONS: In all, a good showing. And an impressive debut for a brand-new system.





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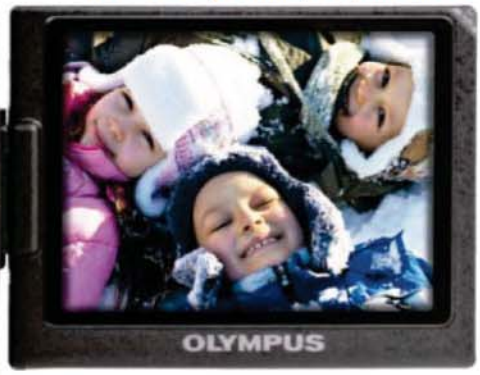
By Dan Richards

ART Attack

As creative as you are



▼**ON THE BACK:** Many controls are found on dedicated buttons. The articulating LCD screen can be tilted up and down, and even folded with the screen facing the body for protection.

Ready for Art Filters?

The new Olympus E-30 ($1,300, estimated street, body only) has six of these in its ample bag of tricks, along with some high-end capabilities inherited from the flagship Olympus E-3. It's also the first Olympus DSLR to crack the 10-megapixel barrier, with a 12.3MP Live MOS sensor.

Positioned just below the E-3 in the Olympus lineup, the E-30 gets the sophisticated autofocus system of the top camera, with 11 twinned focusing points, as well as the 5-frames-per-second burst rate. It has an articulating (tilt and swivel) LCD monitor, too—but, at 2.7 inches, it's bigger than the E-3's 2.5-incher. The camera even takes the same optional HLD-4 vertical battery grip ($200, street) as the E-3.

What it doesn't get from the E-3 is full battle-worthiness. The E-30's body is reinforced polycarbonate, rather than magnesium alloy, and it lacks the weathersealing of the E-3. And while it has the same shutter speed range of the E-3 (60 to 1/8000 sec, with a top flash sync of 1/250 sec), the shutter is not rated for durability (common among consumer-level cameras), whereas the E-3's has a 150,000-cycle rating.

The upside is that the E-30 is lighter and smaller than the E-3. We handled a preproduction model and were impressed with the fine ergonomics of the camera, the well-designed grip and finger rests. The E-30 also sports (yay!) two command dials rather than the single dial of the lower-rung Olympus E-520 and E-420.

What really makes the E-30 stand out in the lineup is the assortment

NEW & NOTEWORTHY

■Highest pixel count yet in an Olympus DSLR. ■Has the AF, burst rate, multi-angle LCD of the E-3. ■Wild (and slightly woolly) in-camera special effects.

CONSIDER THIS IF...

■You're a Four Thirds shooter who wants a high-end camera at a lower-end price than the E-3. ■You gotta have those special effects.

MARZANNA SYNCERZ/FOTOLIA

of Art Filters (special effects applied to JPEGs on the fly), plus the best-designed multiple-exposure system we've seen so far in a DSLR.

Art Filters? These are: Soft Focus; Pale & Light Color (a pastel rendition); Light Tone (a high-key effect); Grainy Film, which, besides converting to grainy black-and-white, gives a high-contrast, lithographic look; Pin Hole, which vignettes edges and softens the image; and Pop Art, an oversaturated look that Olympus says expresses "the joyful, lighthearted feeling of the Pop Art style of the 1960s."

If you're thinking *cheesy*, well, yes. But the Art Filters are fun, and the less over-the-top ones, such as Pale & Light Color, yield pretty effects if used in moderation. (Wedding photographers, take note.) And since the E-30 can capture JPEGs and RAW simultaneously, you can always go back to a straight rendition if you decide the Grainy Film version of your elderly aunt really was a bad idea.

The multiple-exposure mode, for composite images, works through live view. It's neat. Take a shot, and it's displayed as a semi-transparent overlay on the live view, so you can accurately position an additional exposure. Combine up to four images, and the E-30 will automatically adjust their brightness. Wedding photographers will love this, too.

The new TruePic III+ image processor promises greater dynamic range than that of the E-3. A Digital Leveler displays sideways and fore-and-aft tilt, both in the viewfinder and on the live view screen. The E-30 includes the rest of the goodies we've come to expect in Olympus DSLRs: sensor-shift image stabilization (with two panning modes), self-cleaning sensor, wireless TTL control of multiple flashes via the pop-up unit, face detection, and thumbnail previews of the effects of various settings.

Introduced with the camera was the 14–54mm f/2.8–3.5 II Zuiko Digital lens ($600, estimated street), which Olympus may also offer in a kit with the E-30. The projected price of the E-30 puts it in a tough bracket—competitors include the Canon EOS 50D (tested in this issue), Nikon D300, and Sony Alpha 700. So it remains to be seen if the E-30 can master the art…of the deal.

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PREFERRED READER SURVEY PANEL

POPULAR Photography

By Julia Silber

ALLAccess

Tamron 18–270mm f/3.5–6.3 Di II VC AF

With the broadest zoom range (15X) of any interchangeable lens for DSLRs, this 28–419mm equivalent superzoom ($600, street) also packs a Vibration Compensation system for sharp handheld shooting at long focal lengths or slow shutter speeds.

Made with three hybrid aspheric elements and two elements of low-dispersion glass, it's available in Canon and Nikon mounts. The latter has a built-in motor, so it can be used on all Nikon bodies with sensors smaller than full-frame, including the D40 and D40X. (Why no other mounts? Most other DSLR bodies have built-in image stabilization, so they don't need the VC in this Tamron.)

HANDS ON: Slightly lighter than Canon's and Sigma's 18–200mm (11X) stabilized superzooms, the lens is very light considering that it reaches well over 400mm (in full-frame terms). While, when racked out, it's almost an inch longer than Tamron's nonstabilized 18–250mm, the new lens is still compact enough that it casts a shadow only at its widest settings (18–28mm) when used on a Nikon D90 with its built-in flash.

Well marked, with amply sized, very legible, white-on-black focusing and zoom scales, the lens has a half-inch-wide ring with an underdamped turning action and narrow turning radius for fast, if coarse, manual focusing. The zoom action is adequately damped, though slightly uneven, stiffening as you go out. Autofocus on the Nikon D90 was quiet, moderately fast, and accurate. There are three barrel switches: MF/AF, VC on/off, and a zoom lock at 18mm.

IN THE LAB: Optical bench tests for sharpness and contrast produced SQF numbers in the Excellent range at all tested focal lengths except 270mm, where they dipped into the Good range. The numbers were similar to those of most superzooms and almost identical to those of Tamron's 18–250mm.

DxO Analyzer 3.0.1 distortion tests found Visible-range barrel distortion at 18mm (0.75%), and pincushioning in the Slight range at 35mm (0.19%), 100mm (0.22%), and 270mm (0.15%)—again about the same as the 18–250mm. The results suggest that Tamron was able to add the extra reach and Vibration Compensation at little or no optical cost.

Light falloff was gone from the corners by f/5 at 18mm. At the other three zoom settings, we found no discernible vignetting at all. This is a noteworthy achievement compared with most of the competition, and it's a noticeable improvement over the 18–250mm, which showed vignetting at every tested focal length.

Maximum magnification at the uniform close-focusing distance of approximately 15.7 inches ranged from 1:14 at 18mm to a high-powered 1:2.89 at 270mm—significantly stronger than Tamron's published spec of 1:3.5.

Tests of the Vibration Compensation system found handholding gains of between 1.5 and 3 shutter speeds for three different testers. The results also suggested that, more than with most image-stabilized zooms, users will get the best VC performance from this lens by waiting a full second between shots.

CONCLUSIONS: With a 1-2-3 punch delivered by that unequaled zoom range, Vibration Compensation for handholding, and impressive macro and vignetting performances, this is arguably the single most useful lens available to sub-full-frame digital shooters. Autofocus, while not sluggish, is a little too slow for truly active subjects, and the softening at 270mm may be a deal-killer for photographers who need critically sharp tele images.

Most amateurs, however, could shoot for months, if not years, without ever needing or wanting another lens. You may never need a teleconverter or tripod, either!

Specifications 18–270mm (18.25–267.63mm tested), f/3.5–6.3 (f/3.30–n.a.* tested), 18 elements in 13 groups. Focusing turns 70 degrees clockwise. Zoom ring turns 80 degrees counterclockwise. Focal lengths marked at 18-, 35-, 50-, 70-, 100-, 200-, and 270mm. ■ **Diagonal view angle:** 75–5 degrees. ■ **Weight:** 1.32 lb. ■ **Filter size:** 72mm. ■ **Mounts:** Canon AF, Nikon AF. ■ **Included:** Lenshood. ■ **Street price:** $600.

*Tested measurement not available due to instrument limitation.

Subjective Quality Factor

18MM

Size	5x7	8x10	11x14	16x20	20x24
3.5	95.5	94.2	90.9	84.3	76.1
4.0	95.5	94.2	90.9	84.2	76.1
5.6	95.4	94.2	91.1	84.7	76.9
8.0	95.4	94.2	91.0	84.4	76.3
11.0	95.5	94.2	90.9	84.2	75.9
16.0	95.4	94.1	90.7	83.9	75.6
22.0	95.3	93.8	90.4	83.5	75.1

35MM

Size	5x7	8x10	11x14	16x20	20x24
4.2	95.5	94.5	91.5	85.3	77.7
5.6	95.5	94.7	91.8	85.9	78.8
8.0	95.5	94.8	91.9	86.2	79.4
11.0	95.4	94.8	91.5	85.4	77.9
16.0	95.7	94.4	91.3	85.0	77.4
22.0	95.3	93.9	90.4	83.5	74.9
29.0	94.9	93.4	89.6	81.6	71.6

100MM

Size	5x7	8x10	11x14	16x20	20x24
5.6	96.0	95.5	93.1	88.9	84.1
8.0	95.5	95.4	93.0	88.7	83.8
11.0	95.6	95.5	93.2	89.0	84.3
16.0	95.4	95.3	92.7	88.2	83.1
22.0	95.1	94.8	91.7	86.2	79.6
32.0	95.1	93.6	90.0	82.5	73.1
36.0	94.8	93.2	89.3	80.8	70.0

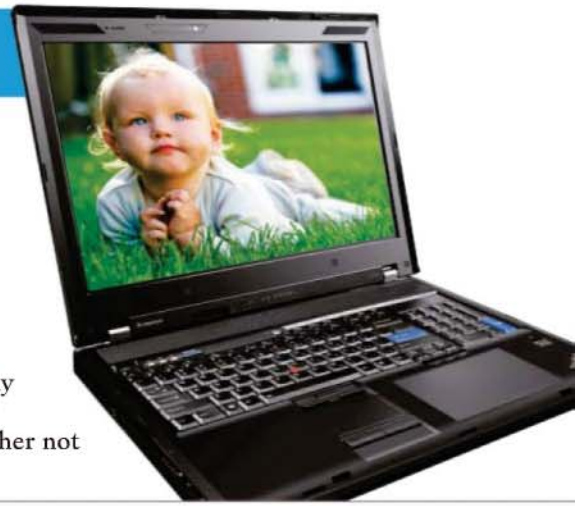
270MM

Size	5x7	8x10	11x14	16x20	20x24
6.3	94.8	92.0	83.0	68.1	55.3
8.0	94.8	92.1	83.3	68.5	55.6
11.0	95.1	92.6	84.9	71.2	59.2
16.0	95.2	92.7	84.8	71.3	58.2
22.0	95.0	92.2	83.2	68.7	53.1
32.0	94.5	91.2	80.2	63.7	53.3
40.0	93.9	90.2	78.1	58.8	46.4

key

A+	A	B+	B	C+	C	D	F

YOU *CAN* TAKE IT WITH YOU: The Lenovo Elite ThinkPad W700 takes your digital darkroom on the road.



Which Laptop Should I Buy?

I'm about to retire both my notebook and my desktop computers—neither can keep up with me anymore. I shoot a lot of RAW, just started taking HD video, and I travel all the time. Is there a notebook powerful enough to serve as my home computer, as well as my workhorse on the road? I'd rather not buy two new machines.

Laptops are more powerful than ever, and you can easily find a fantastic one for both home and away.

If you're an Apple fan, the new 15-inch MacBook Pro (from $2,000, direct; www.apple.com), with a beautiful LED-backlit display, may be the best choice. Its new graphics architecture lets you switch between two processors—a battery-saving one for travel and a high-performance one for when you're plugged in at home.

A great portable for PC users is Sony's Vaio AW series (from $2,300, direct; www.sonystyle.com). Billed as high-definition, it has a built-in Blu-ray player and optional Blu-ray recorder ($100). HDMI ports connect it to an HDTV, so playing your own HD videos is a snap. The extrawide Adobe RGB display is a boon for editing and selecting photos, with lots of room to compare them side-by-side. There's a built-in CompactFlash slot, and Adobe Photoshop Lightroom comes installed.

But for the sweetest portable studio, there's only one choice: Lenovo's Elite ThinkPad W700 (up to $5,300, direct, for all the bells and whistles; www.lenovo.com/us/en). Picture this: a built-in Wacom tablet and pop-out pen for retouching, and an actual Pantone screen calibrator embedded next to the keyboard to ensure color is accurate wherever you work. Its screen is 17 inches of beauty. And it includes two RAID-ready 200GB hard drives.

Other bonuses? Memory card slots, Blu-ray recorder, and, for top security, full-disk encryption and fingerprint reader. At home, plug the ThinkPad into the optional MiniDock ($250, direct) for multiple USB ports and an eSATA port to add speedy backup.

A machine like this ThinkPad is sure to be the only one you need.

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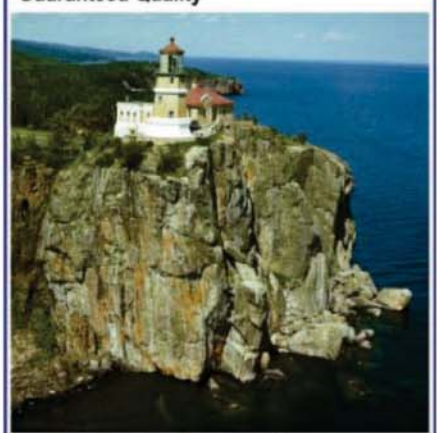

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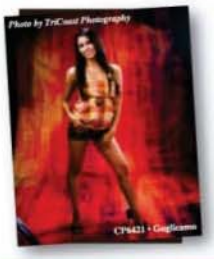

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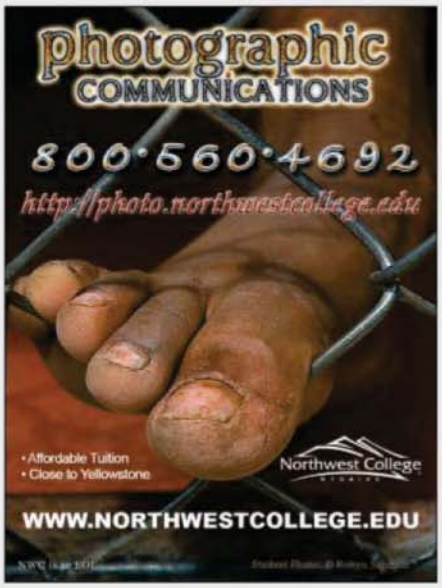

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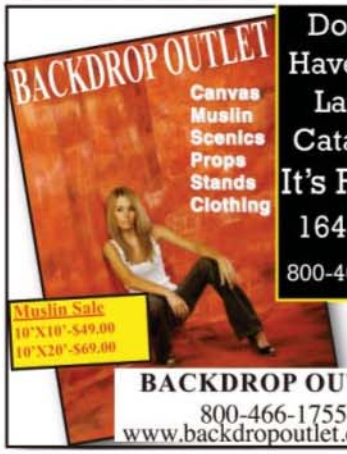

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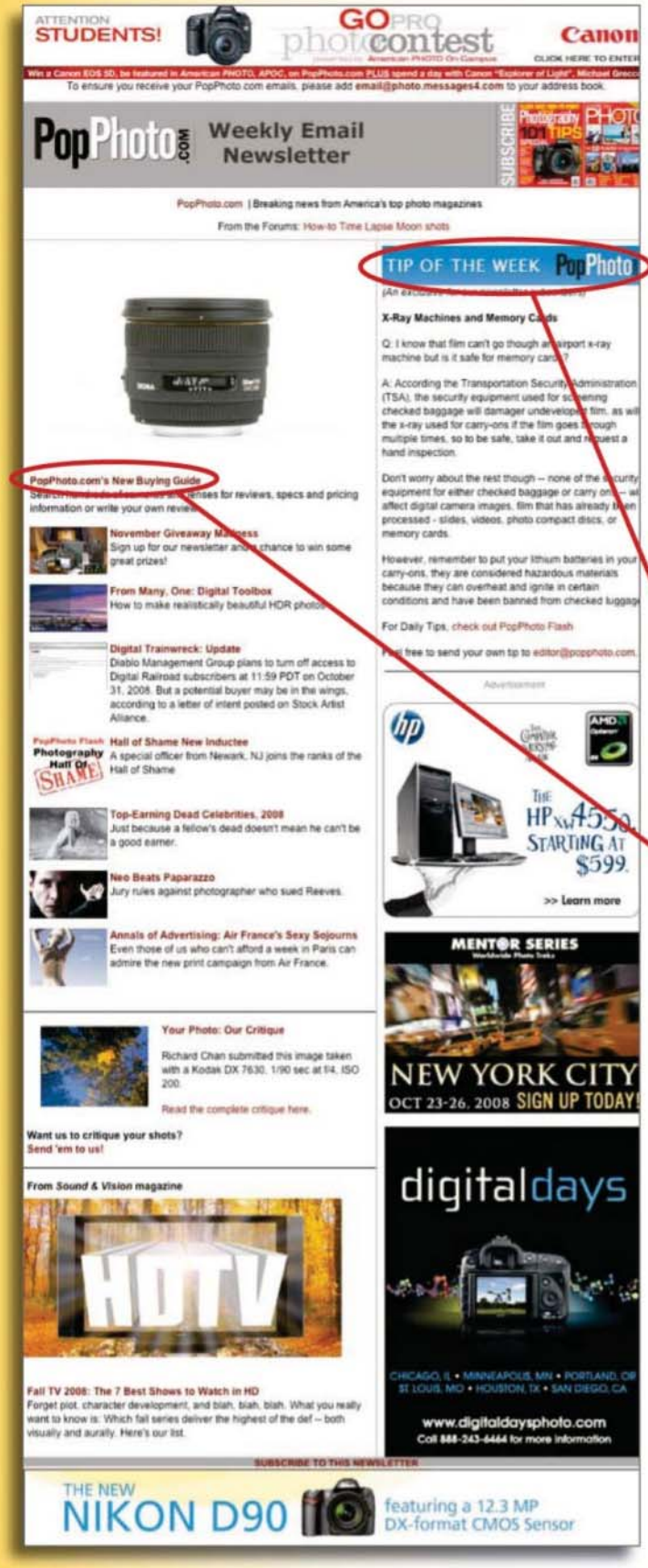
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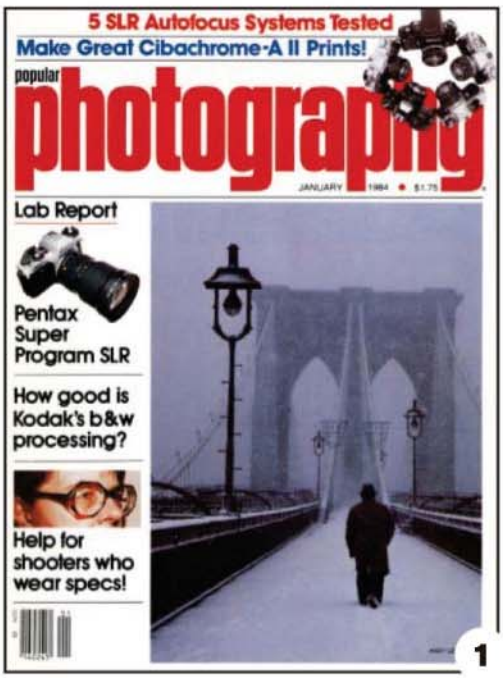
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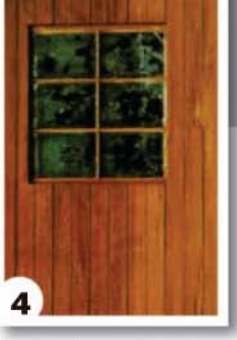

4

1. Icon in winter: A solitary walker on the snow-draped Brooklyn Bridge was recorded by Andy Levin using a tripod-mounted 35mm SLR and 35mm wide-angle lens. The exposure on Kodachrome 64 film was not recorded. Levin had gone out to make pictures of the bridge after an early-winter snowstorm.

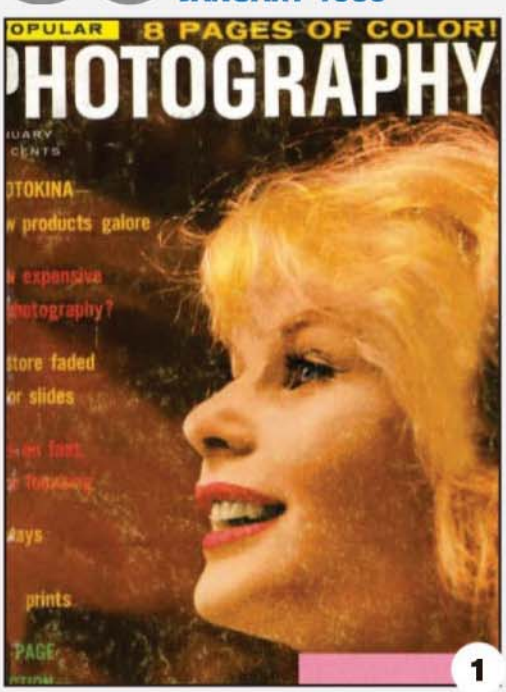
2. Hot quintet: To cope with a burst of new electronic-autofocus reflexes, Technical Director Norman Goldberg combined analysis of five models in one report. Although the new AF systems went a long way to easing focusing problems, Goldberg concluded that they were not yet foolproof. He advised photographers to be aware of the systems' limitations, and to then "become the final testing ground as you handle the camera, shoot a few rolls with it," and study the results.

3. Chinese TLR: As part of a follow-up report on photography in China, Editorial Director Arthur Goldsmith photographed this amateur using a Chinese-made twin-lens reflex. While no camera name was supplied, we're willing to bet it was an early-model Seagull, whose TLRs today are popularly sold in the U.S. as a reasonably priced entry into medium-format photography.

4. Homely abstract: The technique used by Dorothea Kehaya for making Cibachrome prints from color slide film was detailed in a feature written by David Vestal, a well-known photographer and teacher. She used glossy, polyester-based Cibachrome A-II, which she found sharper and more brilliant than traditional photo paper. Her patience, practice, and precision paid off in dramatic color prints from 35mm Kodachrome slides.

1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990

50 YEARS AGO
JANUARY 1959



1

2

1. Nordic miss: Model and actress Ingrid Goude, Miss Sweden 1956, was captured by photographer Don Ornitz. Assigned to take "glamour" pictures for a men's magazine, Ornitz was so intrigued by her face that he made only headshots. This photo was taken on Kodachrome using a Pentax SLR with a 135mm f/4.5 Schneider Xenar lens plus a skylight filter. Exposure was 1/10 sec at f/5.

2. Whiteout: This striking, high-contrast picture was made by Tom Nebbia of Arlington, VA. He shot it in a rainstorm using a 4x5 Speed Graphic with a 5-inch Optar f/4.5 lens. The exposure on Royal Pan film was 1/100 sec at f/5.6. Nebbia purposely underexposed and overdeveloped his negative to increase the photo's contrast.

3

3. Matchbox Mamiya: Cameras the size of cigarette packages gave way to ones the size of matchboxes, as with this Mamiya 16. It included an "Action Wheel" to advance film and set shutter speed, built-in flash-sync, close-focusing to 12 inches, and a built-in yellow filter. All this for $39.95—or, for big spenders, a gift kit with case, flash and flash bulbs, plus three rolls of black-and-white film, for $49.50.

4. Photo Edsel? In an inexplicable marketing move, Bell & Howell introduced its "Infallible" box camera with electric-eye exposure automation. The camera used 127 film to produce 12 4x4cm (Super Slide) images. Designed to provide the convenience of a box camera, it was as expensive ($79.95 with flash and case) as lens/shutter 35mm models that provided more versatility. The Infallible sank without a ripple.

4

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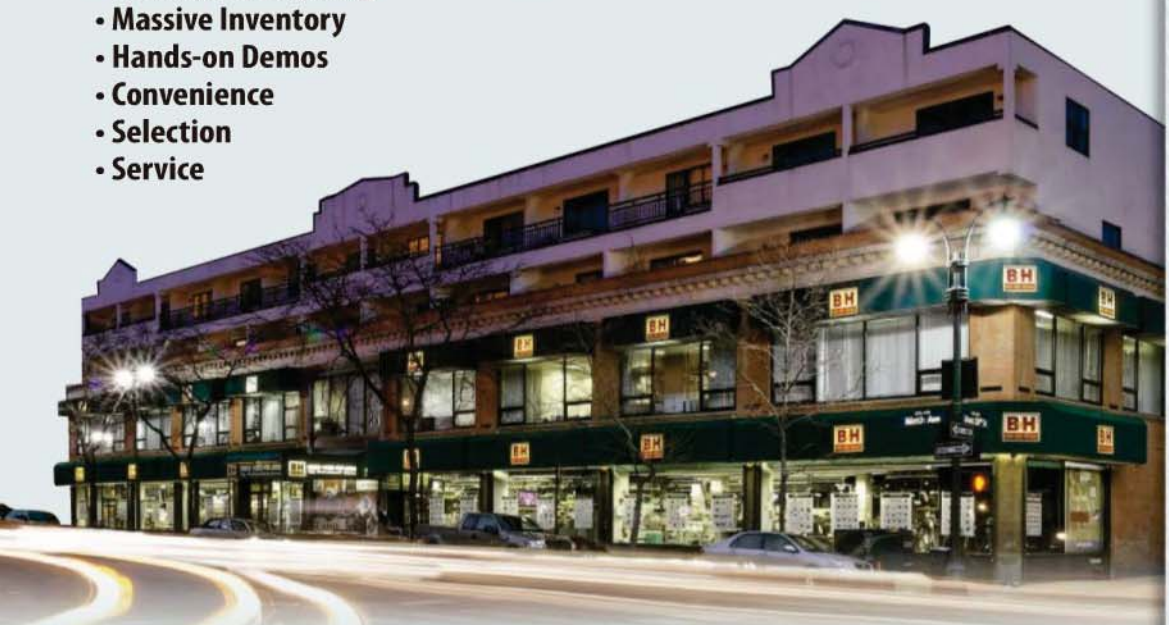

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Quick Dial 61

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- Weight 6.2 oz

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Blue, Brown, Grey or Purple

#CAPSA1000*

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- Dimensions 4 x 2.5 x 1.25"
- Weight 6.5 oz

#CAPSA2000*

10 MegaPixels

Canon Powershot E1
Optical Image Stabilizer System
- 10 MegaPixels • 2.5" LCD Monitor
- 4x Optical Zoom • 4x Digital Zoom
- 6.2-24.8mm f/2.7-5.6 (35 equiv. 35-140mm)
- SD/SDHC (High Capacity) Card Slot
- Dimensions 4 x 2.5 x 1.25"
- Weight 5.64 oz

Blue, Pink or White

#CAPSE1*

10 MegaPixels

Canon Powershot SD890 IS
• Optical Image Stabilizer • Advanced red-eye correction • Motion Detection
- 10 MegaPixels • 2.5" LCD Monitor
- 5x Optical Zoom • 4x Digital Zoom
- 6.6-33mm f/3.2-5.7 (35 equiv. 37-185mm)
- SD/SDHC (High Capacity) Card Slot
- Dimensions 2.3 x 3.8 x 1.1"
- Weight 4.6 oz

#CAPSSD890*

10 MegaPixels

Canon Powershot SD770 IS
Optical Image Stabilizer System
- 10 MegaPixels • 2.5" LCD Monitor
- Advanced Red-eye Correction
- 3x Optical Zoom • 4x Digital Zoom
- 6.2-18.6mm f/2.8-4.9 (35 equiv. 35-105mm)
- SD/SDHC (High Capacity) Card Slot
- Dim. 2.2 x 3.4 x 0.8" • Weight 4.6 oz

Black or Silver

#CAPSSD770*

10 MegaPixels

Canon Powershot SD790 IS
Optical Image Stabilizer System
- 10 MegaPixels • 3" LCD Monitor
- Advanced Red-eye Correction
- 3x Optical Zoom • 4x Digital Zoom
- 6.2-18.6mm f/2.8-4.9 (35 equiv. 35-105mm)
- SD/SDHC (High Capacity) Card Slot
- Dimensions 2.3 x 3.6 x 0.8"
- Weight 5.4 oz

#CAPSSD790*

8 MegaPixels

Canon Powershot SD1100 IS
- 8.0 MegaPixels • 2.5" LCD Monitor
- 3x Optical Zoom • 4x Digital Zoom
- 6.2-18.6mm f/2.8-4.9 (35mm equiv. 38-114mm) Lens • Image Stabilizer
- SD/SDHC (High Capacity) Card Slot
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Blue, Brown, Gold, Pink, or Silver

#CAPSSD1100*

14 MegaPixels

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- SD/SDHC (High Capacity) Card Slot
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#CAEXF1*

8 MegaPixels

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• Picture stabilization mode
- 8.0 MegaPixels • 2.5" LCD Monitor
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- xD & SD/SDHC card slots • 8MB built-in memory • On-Screen Shooting Guide
- Dim. 3.8 x 2.2 x 0.9" • Weight 3.9 oz

Black or Silver

#FUFPJ10*

10 MegaPixels

FUJIFILM FinePix Z20fd
• Blog Mode • One-touch Movie Recording
- 10 MegaPixels • 2.5" LCD Monitor
- 3x Non-extending Optical Zoom Lens
- 5.7x Digital Zoom • xD & SD/SDHC Card Slot
- 6.3-18.9mm f/3.7-4.2 (35 Equiv. 35-105mm)
- Dimensions 2.2 x 3.6 x 0.8"
- Weight 3.9 oz

#FUFPZ20FD*

12 MegaPixels

FUJIFILM FinePix F60fd
Dual Image Stabilization
- 12 MegaPixels • 3" LCD Monitor
- 3x Optical Zoom • 8.2x Digital Zoom
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#FUFPF60FD*

10 MegaPixels

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- 55MB Built-in Memory • Dual IS
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- Weight 13 oz

#FUFPS2000HD*

8 MegaPixels

Kodak EasyShare M863
• Optical Image Stabilization
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#KOM863*

10 MegaPixels

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- Weight 8 oz

#LEDL4*

9 MegaPixels

Nikon Coolpix S60
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- 9.0 MegaPixels • 3" LCD Monitor
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• Dimensions 3.3 x 4.7 x 3.4"
• Weight 15.7 oz #OLSP570UZ*

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• 10x Optical Zoom • 4x Digital Zoom
• 4.6-46mm f/3.3-4.9 (35 equiv. 28-280mm) Leica DC Vario-Elmarit lens • HD Video Capture
• SD/SDHC Card Slot • 27MB built-in Memory
• Dim. 2.4 x 4.1 x 1.5" • Weight 7.4 oz
Black, Blue or Silver #PADMCTZ5*

Panasonic Lumix DMC-FX500
MEGA O.I.S. (Optical Image Stabilizer)
• 10.1 Megapixels • 3" Touch-screen LCD
• 5x Optical Zoom • 4x Digital Zoom
• 4.4-22mm f/2.8-5.9 (35 equiv. 25-125mm) Leica DC Vario-Elmarit lens • SD/SDHC Card Slot • 50 MB built-in Memory
• Dim. 3.8 x 2.3 x 0.9" • Weight 5.5 oz
Black or Silver #PADMCFX500*

Panasonic Lumix DMC-LX3
MEGA O.I.S. (Optical Image Stabilizer)
• 10.1 MegaPixels • 3.0" LCD Monitor
• 2.5x Optical Zoom • 4x Digital Zoom
• 5.1-12.8mm f/2-2.8 (35 Equiv 24-60mm) Leica Lens • RAW File Mode
• SD Card Slot • 50MB Built-in Memory
• Dim. 2.4 x 4.3 x 1.1" • Weight 8 oz
Black or Silver #PADMCLX3*

PENTAX Optio W60
• *JIS Class 8 Waterproof to 13'*
• *Face Recognition* • *HD Movie Capture*
• 10 MegaPixels • 2.5" LCD Monitor
• 5x Optical Zoom • 5.7x Digital Zoom
• 5-25mm f/3.3-4 (35 Equiv. 28-140mm)
• SD/SDHC (High Capacity) Card Slot
• Dimensions 2.2 x 3.9 x 1" • Weight 4.4 oz
Ocean Blue, or Silver #PEOW60*

SAMSUNG L100
• 8.2 MegaPixels • 2.5" LCD Monitor
• 3x Optical Zoom • 3x Digital Zoom
• 6.2-18.6mm f/2.8-5.2 (35 Equiv. 37-111mm)
• SD/SDHC (High Capacity) Card Slot
• 10MB Built-in Memory • Voice Recording
• Record 640 x 480 video at 30 fps
• Dim. 2.2 x 3.5 x 0.8" • Weight 4.1 oz
Black or Silver #SAL100*

SAMSUNG S860
• *Face Detection & Self Portrait Modes*
• 8.1 MegaPixels • 2.4" LCD Monitor
• 3x Optical Zoom • 3x Digital Zoom
• -mm f/ (35 Equiv. 37-111mm)
• SD/SDHC Card Slot • 11MB Built-in Memory
• Record 640 x 480 video at 30 fps
• Dim. 2.2 x 3.5 x 0.8" • Weight 4.1 oz
Black or Silver #SAS860*

SONY CyberShot DSC-S780
• 7.2 MegaPixels • 2.5" LCD Monitor
• 3x Optical Zoom • 2x Digital Zoom
• 5.8-17.4mm f/2.8-4.8 (35 Equiv. 35-105mm) • Simple Controls
• Function Guide • MS Duo/Pro Duo Card Slot • 22MB Built-in Memory
• Dimensions 2.4 x 3.6 x 1.1"
• Weight 5.3 oz #SODSCS780*

SONY CyberShot DSC-W120
• 7.2 MegaPixels • 2.5" LCD Monitor
• 4x Optical Zoom • 6x Digital Zoom
• 5.35-21.4mm f/2.8-5.8 (35 Equiv. 32-128mm) Carl Zeiss Vario-Tessar Lens • MS Duo/Pro Duo Card Slot • 15MB Built-in Memory • Double Anti-Blur System • D-Range Optimizer
• Dim. 2.3 x 3.5 x 0.9" • Weight 4.3 oz
Black, Blue, Pink or Silver #SODSCW120*

SONY CyberShot DSC-W150
• *Double Anti-Blur System*
• 8.1 MegaPixels • 2.7" LCD Monitor
• 5x Optical Zoom • 2x Digital Zoom
• 5-25mm f/3.3-5.2 (35 Equiv. 30-150mm) Carl Zeiss Vario-Tessar Lens • MS Duo/Pro Duo Card Slot • 15 MB Built-in Memory
• Dim. 2.3 x 3.7 x 0.9" • Weight 6.1 oz
Black, Gold, Red, or Silver #SODSCW150*

SONY CyberShot DSC-W170
• *Capture 640 x 480 video at 30 fps*
• 10.1 MegaPixels • 2.7" LCD Monitor
• 5x Optical Zoom • 2x Digital Zoom
• 5-25mm f/3.3-5.2 (35 Equiv. 28-140mm) Carl Zeiss Vario-Tessar Lens • MS Duo/Pro Duo Card Slot • 15 MB Built-in Memory
• Dim. 2.3 x 3.7 x 0.9" • Weight 5.5 oz
Black, Gold, Red, or Silver #SODSCW170*

SONY CyberShot DSC-T300
• *Super Steady Shot Stabilization*
• 10.1 MegaPixels • 3.5" LCD Monitor
• Touch-Screen Operation
• 5x Optical Zoom • 2x Digital Zoom
• 5.8-29mm f/3.5-4.4 (35 Equiv. 33-165mm) Carl Zeiss Lens • MS Duo/Pro Duo Card Slot
• Dim. 2.3 x 3.7 x 0.8" • Weight 5.3 oz
Black, Red or Silver #SODSCT300*

SONY CyberShot DSC-H50
• *NightShot Infrared System*
• 9.1 MegaPixels • 3" Tilt-up LCD Monitor
• 15x Optical Zoom • 2x Digital Zoom
• 5.2-78mm f/2.7-4.5 (35 Equiv. 31-465mm) Carl Zeiss Lens • HDTV Compatibility
• MS Duo Card Slot • 15MB Built-in Memory
• Dimensions 3.2 x 4.6 x 3.4"
• Weight 14.6 oz #SODSCH50*

Memory Cards

CF Compact Flash

	Delkin		Kingston			Lexar			Sandisk			Sony	
	Std	Pro	Std	Ultimate 133x	Ultimate 266x	Platinum II	133x	300x	Ultra II	Extreme III	Extreme IV	133x	300x
1GB	9.95	25.95	9.95	—	—	—	—	—	—	—	—	—	—
2GB	12.50	38.50	13.95	—	29.95	16.95	34.95	38.95	15.95	24.50	—	44.95	—
4GB	19.95	64.95	18.95	19.50	56.95	29.95	49.95	77.95	32.50	39.95	73.50	74.95	104.95
8GB	—	124.95	—	28.95	106.95	46.95	93.50	147.95	48.95	64.95	138.50	—	199.95
16GB	—	226.50	—	64.95	—	—	—	—	—	149.95	—	—	—

MSDUO Memory Stick Pro Duo

	Lexar		Sandisk				Sony	
	40x	Gaming	Standard	Ultra II	Ultra II Mobile	Gaming	Standard	Mark II
1GB	13.50	13.50	13.50	—	—	21.95	19.50	19.95
2GB	19.50	—	19.95	24.50	—	—	—	29.95
2GB 2 Pack	—	—	32.50	—	—	—	—	—
4GB	27.50	—	32.50	36.50	129.95	32.50	—	45.95
8GB	49.95	—	56.95	62.50	—	—	—	99.95
16GB	—	—	—	—	—	—	—	154.95

SD Secure Digital

	Delkin				Kingston	Lexar			Sandisk					Panasonic		
	Standard	Pro	Micro	Mini	Standard	Standard	Platinum II 60x	133x	Standard	Ultra II	Extreme III	Micro	Micro Ultra	5MBs Class 2	5MBs Class 4	20MBs Class 6
1GB	7.50	12.50	6.50	—	—	8.95	11.95	—	—	—	—	13.95	29.95	8.95	—	—
2GB	9.95	12.95	9.95	16.95	7.50	13.50	17.95	27.50	12.99	16.50	29.95	18.95	—	—	9.50	14.50
4GB	—	—	—	22.95	—	—	—	—	—	—	—	—	—	—	—	—
8GB	—	—	—	47.95	—	—	—	—	—	—	—	—	—	—	—	—

XD xD Memory

Type M	1GB	2GB
Fuji	24.95	39.95
Olympus	M+ 22.95	M+ 26.95
Sandisk	18.95	24.95

SD HC Secure Digital High Capacity

	Delkin		Kingston		Lexar			Panasonic			Sandisk				
	Pro Class 6	Standard Class 2	Standard Class 4	Class 6	Standard Class 2	Platinum II 60x Class 6	133x Class 6	6 MBs Class 6	10 MBs Class 4	20 MBs Class 6	Standard Class 2	Ultra II Class 4	Ultra II Class 6	Extreme III 20MBs Class 6	Micro Class 2
4 GB	15.95	14.95	14.50	13.95	19.95	23.50	46.95	—	14.50	24.50	19.95	—	24.50 *	39.95	26.95
8GB	29.95	26.95	24.95	25.95	—	—	84.95	54.50	—	—	36.50	39.95 *	—	64.95 *	—
16 GB	66.95	—	64.95	—	—	—	—	—	—	101.95	—	73.50 *	* with Reader		—
32 GB	167.95	—	—	—	—	—	—	—	—	298.95	—	146.95 *	—	—	—

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Quick Dial 64

12 MegaPixels

Digital Rebel XSiT (Black or Silver)
Body Only ..... #CAEDRXSI*
Kit with 18-55mm IS ..... #CAEDRXSIKB*

Canon Digital Rebel XSi
"D-SLR" Digital SLR Camera
- 12.2 MegaPixels CMOS Sensor
- 3.0" LCD Monitor • SLR viewfinder
- Live View Function • USB 2.0
- Uses Canon EF Lenses (1.6x factor)
- SD/SDHC (High Capacity) Card Slot
- Auto or Manual Focus
- 3.5 fps Continuous Shooting
- High Sensitivity (ISO 100-1600)
- Picture Style Settings
- Integrated Cleaning System
- Uses LP-E5 Battery
- Dimensions 3.8 x 5.1 x 2.4"
- Weight 16.8 oz Body Only

12 MegaPixels

EOS-5D Body Only ..... #CAE5D
Kit with 24-105mm "L" IS USM ..... #CAE30D24105

Canon EOS-5D
"D-SLR" Digital SLR Camera
- ***Full-Frame 36x24mm DIGIC II CMOS sensor*** • 12.8 MegaPixels
- 2.5" LCD Monitor • SLR viewfinder
- Uses Canon EF Lenses • USB 2.0
- CF, MD Card Slot with Playback file size display • Auto or Manual Focus
- 3 fps Burst rate • Hot Shoe & Flash Sync. • Program, Aperture, Shutter, Depth-of-Field, Bracketing, Manual
- ISO 100-3200 • Uses BP-511A Battery
- Dimensions 6 x 4.4 x 2.9"
- Weight 28.5 oz. body only

10 MegaPixels

EOS-40D Body Only ..... #CAE40D
Kit with 28-135mm IS USM ..... #CAE40D28135

Canon EOS-40D
"D-SLR" Digital SLR Camera
- ***RAW and sRAW Image Capture***
- 10.2 MegaPixels • SLR viewfinder
- 3" LCD Monitor with Live View
- Uses Canon EF Lenses (1.6x factor)
- CF Card Slot • "Picture Style" Settings
- Versatile Exposure Metering System
- Single, Continuous, or Manual Focus
- EOS Integrated Cleaning System
- ISO 100-3200 • Burst rate: 6.5 fps
- USB 2.0 • Uses BP-511A Battery
- Dimensions 5.7 x 4.2 x 2.9"
- Weight 26.1 oz Body Only

10 MegaPixels

EOS-1D Mark III Body Only ..... #CAE1D3

Canon EOS-1D Mark III
"D-SLR" Digital SLR Camera
- 10.1 MegaPixels
- DIGIC III Image Processor
- 3" LCD Monitor with live view mode
- Uses Canon EF Lenses (1.3x factor)
- SD & CF Card Slots • 10 fps Shootng Speed • 300,000 Cycle Shutter Unit
- 110 JPEG/30 RAW Image Burst Rate
- 100% Viewfinder Frame Coverage
- 1/300 SEC. Sync Speed
- ISO 50-6400 • Uses LP-E4 Battery
- Dimensions 6.2 x 6.1 x 3.1"
- Weight 40.7 oz. Body Only

15 MegaPixels

EOS-50D Body Only ..... #CAE50D
Kit with 28-135mm IS USM ..... #CAE50D28135

Canon EOS-50D
"D-SLR" Digital SLR Camera
- ***RAW and sRAW Image Capture***
- 15.1 MegaPixels • SLR viewfinder
- 3.0" Clear View VGA LCD
- Uses Canon EF Lenses (1.6x factor)
- CF Card Slot • "Picture Style" Settings
- HDMI output that enables the display of your photographs on any HDTV with HDMI ports • Live View Function
- Single, Continuous, or Manual Focus
- Incredibly High ISO Sensitivity
- Versatile Exposure Metering System
- USB 2.0 • Uses BP-511A Battery
- Dimensions 4.2 x 5.7 x 2.9"
- Weight 25.7 oz Body Only

21 MegaPixels

EOS-1Ds Mark III Body Only ..... #CAE1DS3

Canon EOS-1Ds Mark III
"D-SLR" Digital SLR Camera
- ***Full-Frame CMOS Sensor***
- ***Weather Resistant Body***
- ***Self-Cleaning Sensor***
- 21.1 MegaPixels • SLR viewfinder
- 3" LCD Monitor with Live View
- Uses Canon EF Lenses • 5 fps Burst
- SD/SDHC & CF card slots • USB 2.0
- UDMA-compliant CompactFlash
- Fast AF system • Picture Style Settings
- Powerful Bundled Software
- ISO 100-1600 • Uses LP-E4 Battery
- Dimensions 6.3 x 6.1 3.1"
- Weight 42.5 oz. Body Only

Quick Dial 64

SLR Lenses & Flashes

Canon 580 EX II Shoe Mount Flash

Instant Rebate $50 Rebate

- Guide No. 190'
- Dust- and water-resistance
- Metal Hot Shoe
- Superior build quality, including a metal foot for higher rigidity
- E-TTL II, E-TTL, TTL & Manual
- Bounce & Swivel Head
- Zoom Head (24-105mm)
- Weight 13.2 oz

Canon 10-22/3.5-4.5 EF-S USM Digital Lens

Instant Rebate $50 Rebate

- ***Exclusively designed for Digital SLRs***
- 35mm equivalent 16-35mm
- 3 aspherical lens elements
- 3.5-27 f/Stop Range
- Focus 9.5" to Infinity
- 72mm filter diameter
- Weight 13.6 oz

Canon 17-55/2.8 EF-S USM Digital Lens

Instant Rebate $70 Rebate

- ***Exclusively designed for Digital SLRs***
- IS (Image Stabilizing) technology
- 2.8-22 f/Stop Range
- Focus 13.8" to Infinity
- Angle of View 78.3°-27.5°
- 77mm filter diameter
- Weight 22.4 oz

Canon 24-70/2.8 EF "L" USM Lens

Instant Rebate $80 Rebate

- sealed and gasketed against dust & moisture
- Internal Focusing
- UD Element
- Two Aspherical Elements
- 2.8-22 f/Stop Range
- Focus 1.25' to Infinity
- 77mm filter diameter
- Weight 33.6 oz

* Price After Rebate

Canon
Canon EOS Flash System (USA)

Expires 1-17-09

220EX	125.95		
430EX II	*$30 Rebate*	580EX II	*$50 Rebate*
MR-14EX Ringlight	470.00		
MT-24EX Twin Flash	685.00		

Canon EF-S Lenses *For Digital Only*	IMP	USA
Compatible with the 20D, 30D, 40D, 50D & Digital Rebel only		
60/2.8 USM Macro (52ø)	384.95	370.00*
10-22/3.5-4.5 USM (77ø)	689.95	660.00*
17-55/2.8 **IS** USM (67ø)	999.95	960.00*
17-85/4-5.6 **IS** USM (67ø)	499.95	515.00
18-55/3.5-5.6 **IS** USM (58ø)	—	170.00
18-200/3.5-5.6 **IS** (72ø)	—	*$50 Rebate*
55-250/4.0-5.6 **IS** USM (58ø)	CALL	CALL

Canon EF Lenses	IMP	USA
15/2.8	599.95	610.00
20/2.8 USM (72ø)	429.95	445.00
24/2.8 (58ø)	294.95	305.00
28/2.8 (52ø)	174.95	180.00
28/1.8 USM (58ø)	404.95	420.00
35/2 (52ø)	229.95	240.00
50/1.8 (52ø)	84.95	89.95
50/1.4 USM (58ø)	314.95	325.00
50/2.5 Macro (52ø)	239.95	250.00
MP-E 65/2.8 1x-5x Macro (58ø)	839.95	865.00
85/1.8 USM (58ø)	344.95	355.00
100/2.8 USM Macro (58ø)	469.95	455.00*
100/2 USM (58ø)	394.95	410.00
135/2.8 Soft Focus (52ø)	284.95	295.00
400/4.0 **DO IS** (52ø rear)	5349.95	5500.00
24-85/3.5-4.5 USM (67ø)	309.95	322.00
28-90/4.0-5.6 III (58ø)	89.95	99.95
28-105/3.5-4.5 II USM (58ø)	219.95	229.95
28-135/3.5-5.6 **IS** USM (72ø)	399.95	409.95
28-200/3.5-5.6 USM (72ø)	359.95	375.00
70-300/4.5-5.6 **DO IS** USM (58ø)	1159.95	1190.00
70-300/4-5.6 **IS** USM (58ø)	529.95	499.00*
75-300/4.0-5.6 III (58ø)	154.95	159.95
75-300/4.0-5.6 III USM (58ø)	189.95	200.00
100-300 4.5-5.6 USM (58ø)	279.95	295.00

Canon TS-E MF Lenses	IMP	USA
24/3.5 **"L"**	1129.95	1150.00
45/2.8	1129.95	1150.00
90/2.8	1129.95	1150.00

Canon EF "L" Lenses	IMP	USA
14/2.8 USM II	2029.95	2049.00
24/1.4 (77ø)	1149.95	1170.00
35/1.4 USM (72ø)	1159.95	1180.00
50/1.2 USM (72ø)	1379.95	1400.00
85/1.2 USM II (72ø)	1829.95	1870.00
135/2.0 USM II (72ø)	909.95	935.00
180/3.5 USM Macro (72ø)	1269.95	1300.00
200/2.8 USM (72ø)	669.95	695.00
300/4.0 **IS** USM (77ø)	1189.95	1125.00*
300/2.8 **IS** USM (52ø rear)	3999.95	4100.00
400/2.8 **IS** (52ø rear)	6659.95	6800.00
400/5.6 USM (77ø)	1099.95	1140.00
500/4 **IS** USM (52ø rear)	5639.95	5800.00
600/4.0 **IS** (52ø rear)	7399.95	7600.00
16-35/2.8 USM II (82ø)	1424.95	1350.00*
17-40/4.0 USM (77ø)	669.95	650.00*
24-70/2.8 USM (77ø)	1159.95	1110.00*
24-105/4 **IS** USM (77ø)	1039.95	1059.00
28-300/3.5-5.6 **IS** USM (77ø)	2199.95	2300.00
70-200/4.0 USM (67ø)	579.95	600.00
70-200/4.0 **IS** USM (77ø)	1069.95	1025.00*
70-200/2.8 USM (77ø)	1169.95	1110.00*
70-200/2.8 **IS** USM (77ø)	1649.95	1574.00*
100-400/4.5-5.6 **IS** USM (77ø)	1419.95	1360.00*
1.4x II Teleconverter	279.95	265.00*
2x II Teleconverter	279.95	265.00*

NEW CANON REBATES!

AF Flashes	USA Price	Less Rebate	Final Cost
430 EX	Call	**$30**	**Call**
430 EX II	Call	**$30**	**Call**
580 EX II	Call	**$50**	**Call**
Digital EF-S Lenses			
60/2.8 USM Macro	400.00	**$30**	$370.00
10-22/3.5-4.5 USM	710.00	**$50**	$660.00
17-55/2.8 **IS** USM	1030.00	**$70**	$960.00
18-200/3.5-5.6 **IS**	Call	**$50**	**Call**
AF Lenses			
100/2.8 USM Macro	490.00	**$35**	$455.00
70-300/4-5.6 **IS** USM	549.00	**$50**	$499.00
AF "L" Lenses			
300/4.0 **IS** USM	1210.00	**$85**	$1125.00
16-35/2.8 USM II	1450.00	**$100**	$1350.00
17-40/4.0 USM	700.00	**$50**	$650.00
24-70/2.8 USM	1190.00	**$80**	$1110.00
70-200/4.0 **IS** USM	1100.00	**$75**	$1025.00
70-200/2.8 USM	1190.00	**$80**	$1110.00
70-200/2.8 **IS** USM	1699.00	**$125**	$1574.00
100-400mm **IS** USM	1460.00	**$100**	$1360.00
1.4x II Teleconverter	290.00	**$25**	$265.00
2x II Teleconverter	290.00	**$25**	$265.00

USA = Imported & Warrantied by Canon USA
IMP = Imported & Warrantied by B&H (not qualified for Canon USA Rebates & Warranties)

Nikon D40

"D-SLR" Digital SLR Camera

- ***Compact and Lightweight***
- 6.1 MegaPixels
- 2.5" LCD Monitor • SLR Viewfinder
- SD/SDHC (High Capacity) Card Slot
- Accepts Nikon AF Lenses (1.5x factor)
- Auto or Manual Focus • USB 2.0
- Program, Digital Vari-Program, Aperture, Shutter, Manual, Exposure Compensation, Bracketing
- ISO 200-1600 • Uses EN-EL9 Battery
- ***Nikon Inc. limited warranty included***
- Dimensions 3.7 x 5 x 2.5"
- Weight 17 oz Body Only

D40 Kit with 18-55mm DX.....#NID401855

Nikon D60

"D-SLR" Digital SLR Camera

- 10.2 MegaPixels
- 2.5" LCD Monitor • SLR Viewfinder
- Accepts Nikon AF Lenses (1.5x factor)
- SD/SDHC Card Slot
- Built-in Speedlight
- Integrated Dust Reduction System
- 8 Digital Vari-Program Modes
- Stop-Motion Video • 3 fps Burst
- In-Camera Image Editing & RAW Processing • ISO 100-1600
- USB 2.0 • Uses EN-EL9 Battery
- ***Nikon Inc. limited warranty included***
- Dimensions 3.7 x 5.0 x 2.5"
- Weight 17 oz Body Only

D60 Kits
with 18-55mm **VR**.....#NID601855
with 18-55mm & 55-200mm **VR**.....#NID601855200

Nikon D80

"D-SLR" Digital SLR Camera

- 10.2 MegaPixels • Hot Shoe
- 2.5" LCD Monitor • SLR viewfinder
- Uses Nikon AF Lenses (1.5x factor)
- SD/SDHC (High Capacity) Card Slot
- Auto or Manual Focus • 5 fps Burst
- Program, Aperture, Shutter, Bracketing, Manual, Exposure Compensation • USB 2.0
- Optional Wireless Transmitter
- ISO 100-1600 • Uses EN-EL3e battery
- ***Nikon Inc. limited warranty included***
- Dimensions 4.1 x 5.2 x 3"
- Weight 20.6 oz. body only

D80 Body Only.....#NID80
Kit w/18-135mm DX..#NID20018135

Nikon D300

"D-SLR" Digital SLR Camera

Self-Cleaning Sensor

- 12.3 MegaPixels • 3" LCD Monitor
- Live View • HDMI video out
- Accepts Nikon AF Lenses (1.5x factor)
- CF, MD Card Slot • 6 fps Burst
- Auto or Manual Focus • USB 2.0
- Live View Shooting • 51-Point AF
- 14-Bit A/D Conversion
- Shutter Rated to 150,000 Cycles
- 200-3200 ISO (100-6400 with Boost)
- Uses EN-EL3e battery
- ***Nikon Inc. limited warranty included***
- Dimensions 4.5 x 5.8 x 2.9"
- Weight 29.2 oz. body only

D300 Body Only.....#NID300
Kit with
18-135mm DX.....#NID30018135
18-200mm DX **VR**...#NID30018200

Nikon D90

"D-SLR" Digital SLR Camera

- ***D-Movie mode – record 720p HD movie clips*** • Self Cleaning Sensor
- 12.3 MegaPixels • GPS geo-tagging
- 3.0" LCD Monitor • SLR viewfinder
- Uses Nikon AF Lenses (1.5x factor)
- SD/SDHC (High Capacity) Card Slot
- Auto or Manual Focus • 4.5 fps Burst
- In-Camera Image Editing
- Scene Recognition System
- Active D-Lighting • USB 2.0
- ISO 100-3200 • Uses EN-EL3e battery
- ***Nikon Inc. limited warranty included***
- Dimensions 5.2 x 4.1 x 3"
- Weight 22 oz. body only

D90 Body Only.....#NID90
Kit with 18-105mm **VR** Lens.....#NID9018105

Nikon D700

"D-SLR" Digital SLR Camera

- Self Cleaning Sensor
- 12.1 MegaPixels • Live View
- 3" VGA LCD Monitor • SLR viewfinder
- Uses Nikon AF Lenses
- FX-format CMOS (full frame)
- CompactFlash Card Slot
- Dust and Water Resistant
- Picture Control Settings • 5 fps Burst
- 51-point AF System • HDMI Video Out
- Active D-Lighting Mode • USB 2.0
- ISO 6400 • Uses EN-EL3e battery
- ***Nikon Inc. limited warranty included***
- Dimensions 4.8 x 5.8 x 3.0"
- Weight 33.6 oz. body only

D700 Body Only.....#NID700
Kit with 24-120mm **VR** Lens.....#NID70024120

SLR Lenses & Flashes

Quick Dial 64

Nikon 12-24mm f/4 DX ED-IF G AF-S Super Wide Zoom AF Lens

- ***Exclusively designed for use with Digital SLRs***
- Silent Wave Motor
- ED (Extra-low Dispersion)
- IF (Internal Focusing)
- 35mm equiv. 18-36mm
- Minimum focus 11.8"
- 77mm filter diameter
- Weight 17.6 oz

Nikon 24-70mm f/2.8 G AF-S ED-IF Wide Zoom AF Lens

- Optimized for edge-to-edge sharpness on both the Nikon FX (full-frame) & DX-format image sensors
- Rugged construction, dust and moisture resistance
- Minimum focus 1.2'
- 77mm filter diameter
- Weight 32 oz

Nikon 18-200mm f/3.5-5.6 DX G AF-S ED-IF Digital Lens

- ***Exclusively designed for use with Digital SLRs***
- 35mm equiv. 27-300mm
- VR II Vibration Reduction
- SWM (Silent Wave Motor)
- 3.5-22 f/Stop Range
- Focus 1.6' to Infinity
- 72mm filter diameter
- Weight 19.8 oz

Nikon 24mm f/3.5 D ED PC-E Ultra-Wide Lens with

- Compatible with digital and 35mm SLR cameras
- Ideal for architectural and nature photography
- "Perspective Control" tilt and shift functions
- Minimum focus 0.7'
- 77mm filter diameter
- Weight 25.6 oz

Nikon

Nikon AF Flashes	IMP	USA
SB-400	CALL	CALL
SB-600	CALL	CALL
SB-800	CALL	CALL
SB-900	CALL	CALL
R1 Wireless Twin Flash	CALL	CALL
R1C1 Wireless Twin Flash System	CALL	CALL

Nikon DX ED-IF Lenses for Digital Only

10.5/2.8 Fish-Eye	CALL
12-24/4 G AF-S (77ø)	CALL
16-85/3.5-5.6 G AF-S **VR** (67ø)	CALL
17-55/2.8 G AF-S (77ø)	CALL
18-55/3.5-5.6 G AF-S (52ø)	CALL
18-55/3.5-5.6 G AF-S **VR** (52ø)	CALL
18-70/3.5-4.5 G AF-S (67ø)	CALL
18-135/3.5-5.6 G AF-S (67ø)	CALL
18-200/3.5-5.6 G AF-S (72ø)	CALL
55-200/4-5.6 G AF-S (67ø)	CALL
55-200/4-5.6 G AF-S **VR** (67ø)	CALL

Nikon D-Type AF Lenses	IMP	USA
14/2.8 D ED	1339.95	1419.95
16/2.8 D (39ø) with Hood	699.95	769.95
20/2.8 D (62ø)	469.95	489.95
24/2.8 D (52ø)	299.95	309.95
24/3.5 D ED **PC-E** (77ø)	CALL	CALL
28/2.8 D (52ø)	224.95	234.95
35/2.0 D (52ø)	299.95	319.95
45/2.8 D ED **PC-E** Micro (77ø)	CALL	CALL
50/1.8 D (52ø)	104.95	109.95
50/1.4 D (52ø)	CALL	CALL
60/2.8 D Micro (62ø) (1:1)	CALL	CALL
60/2.8 G AF-S ED Micro (62ø)	469.95	479.95

Nikon D-Type AF Lenses	IMP	USA
85/1.8 D (62ø) with Hood	379.95	399.95
85/1.4 D IF (77ø)	939.95	1024.95
85/2.8 **PC-E** Micro (77ø)	CALL	CALL
105/2.8 G AF-S ED-IF **VR** Micro (62ø)	749.95	759.95
105/2.0 DC D with Hood (72ø)	839.95	924.95
135/2.0 DC D (72ø)	969.95	1069.95
180/2.8 D ED-IF (72ø)	699.95	749.95
200/2 G AF-S ED-IF **VR** (52ø)	3949.95	3999.95
200/4 D ED-IF Micro w/Case (62ø)	1249.95	1349.95
300/4.0 D AF-S ED-IF (77ø)	1024.95	1124.95
300/2.8 G AF-S **VR** (52ø-R)	CALL	4499.00
400/2.8 G AF-S **VR** ED (52ø)	CALL	CALL
500/4.0 G AF-S **VR** ED (52ø)	CALL	CALL
600/4.0 G AF-S **VR** ED (52ø)	CALL	CALL
14-24/2.8 G AF-S ED-IF	1519.95	1539.95
17-35/2.8 (77ø)	1369.95	1499.95
24-70/2.8 G AF-S ED-IF (77ø)	CALL	CALL
24-85/2.8-4.0 D (72ø)	499.95	564.95
24-120/3.5-5.6 G AF-S **VR** (72ø)	489.95	509.95
70-200/2.8 G AF-S ED-IF **VR** (77ø)	1599.95	1629.95
70-300/4.0-5.6 G (62ø)	124.95	139.95
70-300/4.5-5.6 G-AFS **VR** (67ø)	469.95	479.95
80-200/2.8 D with Collar (77ø)	899.95	924.95
80-400/4.5-5.6 D **VR** (77ø)	1374.95	1419.95
200-400/4 G AF-S ED-IF **VR** (52ø)	5099.95	5199.95
TC-14E II (1.4x) Teleconverter	359.95	409.95
TC-17E II (1.7x) Teleconverter	359.95	419.95
TC-20E II (2x) Teleconverter	359.95	429.95

USA = Imported & Warrantied by Nikon USA (AF lenses include 1 year warranty plus 4 years extended service coverage)
IMP = Imported & Warrantied by B&H (not qualified for Nikon USA Rebates & Warranties)

Nikon SB-800 Speedlight i-TTL Shoe Mount Flash

- Guide No. 125'
- Recycling Time 2.7 Secs
- Bounce & Swivel Head
- Zoom Head (24-105mm)
- Multiple Flash Exposure Modes
- Safety lock on flash shoe
- Weight 12.3 oz

Nikon SB-900 Speedlight i-TTL Shoe Mount Flash

- Guide No. 131'
- Recycling Time 4.5 Secs
- Bounce & Swivel Head
- Zoom Head (17-200mm)
- Stroboscopic Effect
- AF-Assist Illuminator
- Safety lock on flash shoe
- Weight 14.6 oz

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Quick Dial 64

10 MegaPixels

E-520 Body Only ..... #OLEE520
E-520 Kit with 14-42mm Zuiko Lens ..... #OLEE5201442

OLYMPUS Evolt E-520

"D-SLR" Digital SLR Camera

- ***In-Body Image Stabilization***
- ***Supersonic Wave Filter Anti-dust System*** • Capture in JPEG or RAW
- 10 MegaPixels • SLR viewfinder
- 2.5" Live View LCD monitor
- ***4/3 Full Frame Zuiko Specific Lenses***
- CF & XD Dual Card Slots
- Select ISO 100-1600
- 20 Easy-to-use Scene-select Modes
- 3.5 fps Burst • Face Detection
- Shadow Adjustment
- USB 2.0 • Uses BLM-1 Battery
- Dimensions 3.6 x 5.4 x 2.7"
- Weight 16.5 oz Body Only

10 MegaPixels

K20D Super Body Only ..... #PEK200D
Kit w/18-55mm Lens #PEK200D1855

PENTAX K200D Super

"D-SLR" Digital SLR Camera

- ***Sensor-Shift Shake Reduction***
- ***Weather and Dust Resistant***
- 10.2 Megapixels
- 2.7" LCD Monitor • SLR viewfinder
- Uses Pentax AF Lenses (1.5x factor)
- SD/SDHC (High Capacity) Card Slot
- Dust Removal System
- Effective Noise Reduction
- PictBridge Compatible
- Auto Picture Mode • USB 2.0
- ISO 100-1600 • 2.8 fps Burst
- Powered by AA-size Batteries
- Dimensions 3.7 x 5.2 x 2.9"
- Weight 22.2 oz. body only

10 MegaPixels

E3 Body Only ..... #OLE3

OLYMPUS E3

"D-SLR" Digital SLR Camera

- ***Supersonic Wave Filter***
- 10.1 MegaPixels • TruePic III Digital Image Processing System • Rugged Weatherproof Magnesium-alloy Construction • CF & XD Card Slots
- 2.5" Dual-axis, Free-angle LCD
- SLR viewfinder • Live View Function
- ***4/3 Full Frame Zuiko Specific Lenses***
- In Camera Blur Reduction
- Auto or Manual Focus • USB 2.0
- 5 fps Burst • Select ISO 100-3200
- Uses BLM-1 Lithium-ion Battery
- Dimensions 5.6 x 4.6 x 2.9"
- Weight 28.7 oz. Body Only

10 MegaPixels

Alpha A200 Kits with 18-70mm ..... #SODSLRA200K
with 18-70mm and 75-300mm ..... #SODSLRA200W

SONY Alpha A200

"D-SLR" Digital SLR Camera

- ***Super SteadyShot image stabilization and dust reduction***
- 10.2 MegaPixels • SLR viewfinder
- 2.7" ClearPhoto LCD monitor
- Uses Sony Alpha & Minolta Maxxum Lenses (1.5x factor) • CF Card Slot
- Anti-dust Protection • USB 2.0
- D-Range Optimizer (DRO)
- 3 fps Continuous Burst
- Eye-Start Autofocus
- ISO 100-3200 Sensitivity
- Uses NP-FM500H Battery
- Dimensions 3.9 x 5.2 x 2.8"
- Weight 18.8 oz. body only

10 MegaPixels

Kit with Leica D Vario-Elmarit 14-50/2.8-3.5 MEGA O.I.S. Aspherical ..... #PADMCL10K

Panasonic Lumix DMC-L10

"D-SLR" Digital SLR Camera

Four-Thirds System (17.3 x 13mm) CCD

- 10.1 MegaPixels • 3 fps Shooting Speed
- 2.5" free-angle LCD Monitor rotates 180° horizontally and 270° vertically
- SLR viewfinder • Dust Reduction System
- Uses ***4/3 Full Frame Leica-Panasonic-Olympus Lenses*** (1.5x factor)
- SD/SDHC (High Capacity) Card Slot
- Auto or Manual Focus • ISO 100-1600
- SILKYPIX Developer Studio
- USB 2.0 • Li-ion Battery Pack
- 3.8 x 5.3 x 3" • Wt. 17 oz. body only

12 MegaPixels

A700 Body Only ..... #SODSLRA700
Kit with 18-70mm ..... #SODSLRA700K
Kit with 16-105mm ..... #SODSLRA700P

SONY Alpha A700

"D-SLR" Digital SLR Camera

- ***Super SteadyShot image stabilization and dust reduction***
- 12.2 MegaPixels • 5 fps Burst
- 3" LCD monitor • SLR viewfinder
- Uses Sony Alpha ***(compatible with Minolta A-type bay mount)*** Lenses (1.5x factor) • Program AE, Shutter Priority, Aperture Priority, Manual, Exposure Compensation, Bracketing
- CF & MS Card Slots • USB 2.0
- Auto or Manual Focus, Eye Start AF
- ISO 100-1600 (up to 6400 w/ Boost)
- Uses NP-FM500H Lithium-ion Battery
- 5.6 x 4.3 x 3.3" • Wt 24 oz. Body Only

Quick Dial 61

Digital Picture Frames

Smartparts
15" Walnut Digital Frame
- 1024 x 768 Screen Resolution
- 256MB built-in memory
- Accepts all popular memory cards
- Multimedia Presentation

#SMDPF15WW

Kodak
EasyShare 8" Digital Frame
- PictBridge Enhanced Multimedia Display
- 800 x 480 Screen Resolution
- 128MB built-in memory
- CF I/II, SD/MMC, MS, xD Card Slots

#KOFD8

Aluratek
11" Wood Digital Frame
- 1024 x 768 Screen Resolution
- 1GB Included SD Memory
- Accepts all popular memory cards
- Mosaic view option
- Includes wireless remote

#ALDPF11

SONY
DPF-V900 9" Digital Frame
- Automatic rotation of images
- 800 x 480 Screen Resolution
- 512MB built-in memory
- Accepts all popular memory cards

#SOF9

Quick Dial 64

SLR Lenses & Flashes

OLYMPUS

Flash System

FL-20 Flash	114.95
FL-36R Flash	229.95
FL-50R Flash	429.95
RF-11 Ring Flash	229.95
SRF-11 Ring Flash Set	479.95
TF-22 Twin Flash	449.95
STF-22 Twin Flash Set	629.95

Zuiko 4/3 System Digital Lenses for E-1 & Evolt Cameras

8/3.5 Fish-eye	659.95
35/3.5 Macro (52ø)	189.95
50/2.0 Macro (77ø)	406.95
150/2.0 EP (82ø)	2099.95
300/2.8 ED	5894.95
7-14/4.0 ED (72ø)	1511.95
11-22/2.8-3.5 ED (72ø)	649.95
12-60/2.8-4 ED SWD (72ø)	799.95
14-42/3.5-5.6 EZ (58ø)	239.95
14-54/2.8-3.5 (67ø)	399.95
18-180/3.5-6.3 ED (62ø)	399.95
35-100/2.0 ED (77ø)	2099.95
40-150/4-5.6 (58ø)	279.95
90-250/2.8 ED (105ø)	5189.95
EC-14 1.4x Teleconverter	384.95
EC-20 2x Teleconverter	479.95
MF-1 OM Lens Adapter	99.95

PENTAX

AF Flash System

AF-360FGZ	219.95
AF-540FGZ	339.95

SMCP-DA Digital AF Lenses

14/2.8 ED IF (77ø)	599.95
21/3.2 AL Limited *"Pancake"* (49ø)	424.95
35/2.8 Macro Limited (49ø)	489.95
40/2.8 Limited *"Pancake"* (49ø)	269.95
70/2.4 Limited *"Pancake"* (49ø)	479.95
200/2.8 ED IF	949.95
300/4.0 ED IF SDM (77ø)	1169.95
10-17/3.5-4.5 ED IF (77ø)	429.95
12-24/4 ED AL IF (77ø)	699.95
16-45/4 ED AL (67ø)	399.95
16-50/2.8 ED AL IF SDM (77ø)	699.95
18-55/3.5-5.6 AL II (52ø)	149.95
18-250/3.5-6.3 ED IF AL (62ø)	449.95
50-135/2.8 ED IF SDM (67ø)	749.95
50-200/4-5.6 ED (52ø)	219.95
55-300/4-5.8 ED (58ø)	399.95

AF Lenses for 35mm & Digital SLRs

31/1.8 Limited (58ø)	869.95
35/2.0 AL (49ø)4-5.6	299.95
43/1.9 Limited *"Pancake"* (49ø)	469.95
50/1.4 (49ø)	199.00
50/2.8 Macro (52ø) with Case	394.95
77/1.8 Limited (49ø)	679.00
100/2.8 D FA Macro (49ø)	524.95
28-80/3.5-5.6 J FA AL (58ø)	59.95

SONY

Compatible with Maxxum D-SLRs
Flash System

HVL-F36AM	199.99
HVL-F56AM	449.99

Digital Lenses

16/2.8 Fish-eye	799.99
20/2.8 (72ø)	559.99
28/2.8 (49ø)	249.99
35/1.4 (55ø)	1299.99
50/1.4 (55ø)	349.99
50/2.8 Macro (55ø)	449.99
85/1.4 *Carl Zeiss* (72ø)	1299.99
100/2.8 Macro (55ø)	639.99
135/1.8 *Carl Zeiss* (77ø)	1399.99
135/2.8 STF (72ø)	1199.99
300/2.8 G APO	5999.99
500/8 Reflex	699.99
11-18/4.5-5.6 DT (77ø)	649.99
16-80/3.5-4.5 DT *Carl Zeiss* (62ø)	699.99
18-70/3.5-5.6 DT (55ø)	199.99
18-200/3.5-6.3 DT (62ø)	499.99
24-105/3.5-4.5 D (62ø)	469.99
70-200/2.8 G APO (77ø)	1799.99
75-300/4.5-5.6 (55ø)	229.99
1.4x Teleconverter	449.99
2x Teleconverter	449.99

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Made exclusively with glass from Schott (Zeiss) the world's finest optical glass supplier

Schott Glass in Brass Rings	55	58	62	67	72	77
Skylight (1B), UV	32.75	34.25	45.00	51.25	63.00	73.75
Skylight (1B), UV SH-PMC	59.75	65.00	78.25	85.50	108.50	120.50
Polarizer (Rotating)	57.25	64.50	71.00	84.50	95.00	99.50
Circular Polarizer	85.50	89.75	96.75	112.00	134.00	153.00
Circular Polarizer SH-PMC	128.00	135.00	146.75	167.25	185.50	212.75
Circular Polarizer Slim	85.50	89.75	96.75	112.00	134.00	153.00
#5 Lt Yel, #8 Yel, #25 Lt Red, #13 Green	32.75	34.25	45.00	51.25	63.00	73.75
#11 Yel/Grn, #15 Dark Yel, #22 Orange	32.75	34.25	45.00	51.25	63.00	73.75
81A, 81B, 81C	32.75	34.25	45.00	51.25	63.00	73.75
Digital Filter	138.00	141.50	145.00	168.75	200.00	236.00

B+W

B&H SPECIAL! Buy 3 or more B+W Filters & Get 5% Off.

	55	58	62	67	72	77
UV, KR1.5	25.95	25.95	29.95	38.95	44.95	51.95
UV, KR1.5 Multi-Coated	39.95	39.95	46.95	54.95	68.50	93.95
UV, KR1.5 Slim W.A. Multi-Coated	74.95	84.95	97.95	103.95	119.95	112.95
Circular Polarizer	66.95	68.95	72.95	86.50	99.50	111.95
Circular Polarizer Multi-Coated	96.50	99.50	104.95	124.50	143.50	169.95
Circular Polarizer Slim W.A.	54.95	59.95	72.50	79.95	93.50	99.50
Kaesemann Circular Polarizer	102.95	104.95	117.50	139.95	157.95	189.95
81A, B, KR3, 6, 12, 15	22.95	24.95	29.95	36.95	46.95	52.95
KB1.5, 3, 6, 12, 15, 20	25.95	25.95	29.95	38.95	44.95	51.95
#021, 022, 023, 040, 041, 060, 061, 081, 090	25.95	25.95	29.95	38.95	44.95	51.95
For Infrared Film 092, 093, 489	99.95	99.95	99.95	124.95	144.95	166.95
Graduated (N.D. & Colors)	52.95	54.95	57.95	64.95	74.95	92.95
ND .3 (101), .6 (102)	25.95	25.95	29.95	38.95	44.95	51.95
ND .9 (103), 1.8 (106)	44.95	44.95	69.95	69.95	89.50	99.95
ND 3.0 (110), 4.0 (113), 6.0 (120)	44.95	44.95	69.95	69.95	89.50	99.95
Enhancing	43.95	45.95	72.95	74.95	94.95	104.95
Close-Up Lenses 0.25, 0.50, 1, 2, 3, 4, 5	25.95	25.95	29.95	38.95	44.95	51.95

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Cokin universal filter holder system allows you to use 1 of 160 different filters on many different sized lenses. Works with all lenses of SLR cameras (35mm or Digital) There are 3 different Series in the COKIN System.

"A" Series— for lens diameters from 36mm to 62mm
"P" Series— for lens diameters from 48mm to 82mm
"Z-PRO" Series— for lens diameters from 49mm to 96mm

Series	"A"	"P"	Z-Pro
001 Yellow	16.49	22.54	43.99
002 Orange	16.49	22.54	43.99
003 Red	16.49	22.54	43.99
004 Green	16.49	22.54	43.99
005 Sepia	16.49	22.54	43.99
006 Yellow-Green	16.49	22.54	43.99
020 Blue 80A	17.04	23.64	43.99
021 Blue 80B	17.04	23.64	43.99
022 Blue 80C	17.04	23.64	43.99
023 Blue 82A	17.04	23.64	43.99
024 Blue 82B	17.04	23.64	43.99
026 Warm 81A	17.04	23.64	43.99
027 Warm 81B	17.04	23.64	43.99
028 Warm 81C	17.04	23.64	43.99
029 Orange 85A	17.04	23.64	43.99
030 Orange 85B	17.04	23.64	43.99
035 Warm 81D	17.04	23.64	43.99
036 FLW	17.04	23.64	43.99
045 Sepia Light	17.04	23.64	43.99
046 FLD	17.04	23.64	43.99
047 Gold	17.04	23.64	—
056 Star 8	24.19	31.34	—
057 Star 4	24.19	31.34	—
059 Softstar	24.19	31.34	—
060 CS Incolor 1	18.69	24.19	—
063 CS Grey 2	18.69	24.19	—
083/830 Diffuser 1	21.99	25.29	—

Series	"A"	"P"	Z-Pro
084/840 Diffuser 2	21.99	25.29	—
085/850 Diffuser 3	21.99	25.29	—
086 Pastel 1	21.99	25.29	54.99
087 Pastel 2	21.99	25.29	54.99
103 Close-up +3	21.99	25.29	—
120 Grad G1 Grey	24.19	31.89	—
121 Grad G2 Grey	24.19	31.89	—
122 Grad B1 Blue	24.19	31.89	65.99
123 Grad B2 Blue	24.19	31.89	65.99
124 T1 Tobacco	24.19	31.89	65.99
125 T2 Tobacco	24.19	31.89	65.99
126 M1 Mauve	24.19	31.89	—
127 M2 Mauve	24.19	31.89	—
150 Fog 1	24.19	32.44	—
151 Fog 2	24.19	32.49	—
152 Grey ND2x	17.59	21.49	44.99
153 Grey ND4x	17.59	23.64	49.49
154 Grey ND8x	17.59	21.49	49.49
160 Linear Pol	37.39	57.74	—
164 Circular Pol	51.69	104.49	—
173 VC Blue/Yellow	40.14	63.79	—
185 Radial Zoom	19.79	26.94	—
194 Gelatin Holder	14.29	15.39	—
197 Sunset 1	28.04	35.19	60.49
198 Sunset 2	28.04	35.19	60.49
220 Mirage	49.49	—	—
346 Double Exposure	16.49	15.39	—

Why Filters for Digital Cameras? With sophisticated image editing tools like PhotoShop & PHOTO-PAINT, why bother with optical filters? Given enough time, talent and patience, you probably could emulate most filter effects in post-processing, but when would you find time to shoot, eat & sleep?

HOYA

B&H SPECIAL! Buy 3 or more Hoya Filters & Get 10% Off.

	58	62, 67	72	77	82
UV, Skylight (1B)	14.85	22.35	34.35	38.85	46.35
UV, Skylight (1B) HMC	22.35	32.85	40.35	49.35	62.85
UV, Skylight (1B) Pro 1 Super HMC	35.85	41.85	52.35	56.85	70.35
Polarizer (Rotating)	22.35	34.35	41.85	50.85	61.35
Circular Polarizer	40.35	58.35	70.35	82.35	109.35
Circular Polarizer HMC	76.35	92.85	130.35	169.35	262.35
Circular Polarizer Ultra Thin Super HMC	83.85	101.85	149.85	187.35	281.85
"Moose" Warm Circular Polarizer	59.85	86.85	107.85	128.85	166.35
K2 Yel, X0 Yel/Grn, Grn X1, Or G, Red 25A	20.85	32.85	40.35	49.35	61.35
K2 Yel, X0 Yel/Grn, Grn X1, Or G, Red 25A HMC	26.85	38.85	46.35	56.85	65.85
80A, B, C, 81A, B, C, 82A, B, C, 85, B, C	20.85	32.85	40.35	49.35	61.35
80A, B, C, 81A, B, C, 82A, B, C, 85, B, C HMC	26.85	38.85	46.35	56.85	65.85
Close Up Set	49.35	68.85	88.35	97.35	—
Close-Up Set HMC	70.35	92.85	—	—	—
Cross Screen	20.85	32.85	40.35	49.35	61.35
Diffuser	20.85	32.85	40.35	49.35	61.35
Fluorescent FLD, FLW	20.85	32.85	40.35	49.35	61.35
Fluorescent FL-D, FLW HMC	26.85	38.85	46.35	56.85	—
Grad Color (Blue, Emerald, Grey, Mauve, Pink, Tobacco, Yellow)	23.85	—	—	—	—
Intensifier – Blue, Green Field, Enhancement (Red)	49.35	62.85	70.35	83.35	—
Neutral Density 2x, 4x, 8x	20.85	32.85	40.35	49.35	61.35
Neutral Density 2x, 4x, 8x HMC	26.85	38.85	46.35	56.85	65.85
Soft A, B	34.35	49.35	56.85	59.85	—
Soft Spot Set	40.35	53.85	62.85	70.35	—
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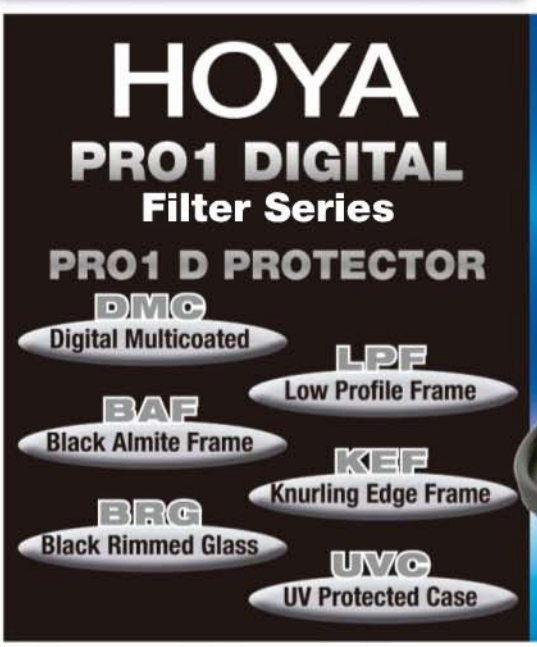

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OM-MZ70	Metz 70MZ-4, 70MZ-5
OM-PZ4	Sunpak 4000, Metz 40AF-4N
OM-SB16	Nikon SB16
OM-SB5	Nikon SB-50, 800X
OM-600	Nikon SB-600
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OM-EY	Canon 580EX
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DC 30mm f/1.4 EX **HSM** (62ø)	439.00	439.00^	439.00	439.00	439.00	439.00
DG 50mm f/1.4 EX (77ø)	499.00*	499.00*	499.00	499.00	499.00	499.00*
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DG 180/3.5 EX APO IF Macro **HSM** (72ø)	899.00	899.00^	899.00	—	899.00	899.00
DG 300/2.8 APO EX **HSM**	2,999.00	2,999.00^	2,999.00	—	2,999.00	2,999.00
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DG 800/5.6 APO EX **HSM**	7,399.00	7,399.00^	7,399.00	—	7,399.00	7,399.00
DC 10-20/4-5.6 EX **HSM** (77ø)	479.00	479.00^	479.00	479.00	479.00	479.00
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TAMRON 17-50mm f/2.8 XR LD-IF Di II Digital Lens

- *Exclusively designed for use with digital SLR cameras*
- Focus 10.6" to Infinity
- Magnification ratio of 1:4.5
- 78°-31° Angle of View
- 67mm filter diameter
- Weight 15.2 oz

TAMRON 28-300mm f/3.5-6.3 XR VC LD Aspherical IF Macro Di AF Lens

- *Desirable for Digital SLR Cameras*
- "VC" Vibration Compensation
- Minimum Focus 1.6'
- Magnification ratio 1:3
- 75-8° angle of view
- 67mm filter diameter
- Weight 19.2 oz

Tokina

DX – Designed for Digital SLR cameras only

AF Lenses	Canon	Nikon
DX 35/2.8 Pro Macro (52ø)	459.95	459.95
100/2.8 Pro D (55ø)	399.95	399.95
DX 10-17/3.5-4.5 ATX Fisheye	559.95	559.95
DX 11-16/2.8 Pro (77ø)	569.95	569.95
DX 12-24/4.0 Pro (77ø)	499.95	499.95
DX 16-50/2.8 Pro (77ø)	659.95	659.95
DX 50-135/2.8 (67ø)	699.95	699.95
80-400/4.5-5.6 ATX D (72ø)	649.95	649.95

TAMRON 6 YEAR WARRANTY

Di – Designed for use on both digital & film SLR cameras
Di-II – Designed for Digital SLR cameras only

TAMRON REBATES EXTENDED!

AF Lenses	Reg. Price	Less Rebate	Final Cost
90/2.8 Di Macro	489.00	$90	399.00
180/3.5 LD IF Di Macro	699.00	$50	649.00
11-18/4.5-5.6 Di-II	569.00	$75	494.00
17-35/2.8-4 Di	299.00	$10	289.00
18-200/3.5-6.3 Di-II	279.00	$30	249.00
28-200/3.8-5.6 Di	299.00	$50	249.00
28-300/3.5-6.3 Di	399.00	$50	349.00
28-75/2.8 XR Di	399.00	$10	389.00
55-200/4-5.6 Di-II	189.00	$40	149.00
200-500/5-6.3 Di	879.00	$30	849.00

AF Lesnses * Price After Rebate (Expires 12-31-08)	Canon EOS	Nikon AF	Sony/ Minolta	Pentax AF
14/2.8 AF	1,099.00	1,099.00	—	—
Di 90/2.8 Macro (55ø)	399.00*	399.00*	399.00*	399.00*
Di 180/3.5 LD IF Macro (72ø)	649.00*	649.00*	649.00*	—
Di-II 11-18/4.5-5.6 (77ø)	494.00*	494.00*	494.00*	—
Di 17-35/2.8-4 LD IF Aspherical (77ø)	289.00*	289.00*	—	—
Di-II 17-50/2.8 XR LD IF Aspherical (67ø)	449.00	449.00	449.00	—
Di-II 18-200/3.5-6.3 (62ø)	249.00*	249.00*	249.00*	249.00*
Di-II 18-250/3.5-6.3 (62ø)	499.00	499.00	499.00	499.00
Di-II 18-270/3.5-6.3 VC	599.00	599.00	—	—
Di 28-75/2.8 XR (67ø)	389.00*	389.00*	389.00*	389.00*
28-80/3.5-5.6 (58ø)	79.00	79.00	79.00	79.00
Di 28-200/3.8-5.6 Aspherical XR IF Macro (62ø)	249.00*	249.00*	249.00*	249.00*
Di 28-300/3.5-6.3 XR (62ø)	349.00*	349.00*	349.00*	349.00*
Di 28-300/3.5-6.3 XR VC (62ø)	599.00	599.00	—	—
Di-II 55-200/4-5.6 LD Macro (52ø)	149.00*	149.00*	149.00*	—
Di 70-200/2.8 LD IF Macro (77ø)	699.00	699.00	699.00	699.00
Di 70-300/4.0-5.6 LD Macro (62ø)	189.00	189.00	189.00	189.00
75-300/4.0-5.6 LD (62ø)	149.00	149.00	149.00	149.00
Di 200-500/5-6.3 LD IF (86Cø)	849.00*	849.00*	849.00*	—
SP 1.4x AF Pro Converter	189.00	189.00	—	—
SP 2x AF Pro Converter	219.00	219.00	—	—

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- 1080i HD Video
- 6 Megapixel
- 12x optical zoom

EX-FH20

- 40 shots per second High Speed Burst mode
- 1,000 frames per second High Speed Video
- Slow Motion Video (300-600 frames per second)
- 720p HD Video
- 9.1 Megapixel
- 20x optical zoom

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For additional information on Casio's Exilim High Speed Cameras, visit www.CasioHighSpeed.com.

HIGH SPEED EXILIM

COLOR PRINT FILM

Kodak

	Gold – GA 100 IMP	Gold – GB 200 IMP	Max – GC 400 IMP
135-24	2.19	2.49	2.89
135-36	—	3.19	2.99

	Portra 160NC	Portra 160VC	Portra 400NC	Portra 400VC	Ultra Prof. 800	Ultra Prof. 100UC	Ultra Prof. 400UC
135-36	5.49	5.49	5.99	5.99	6.25	4.95	4.95
120 Roll	4.15	4.15	4.30	4.30	5.09	—	—
220 PP (5)	39.95	—	42.95	42.95	—	—	—

IMP imported from Europe

USA Manufactured in USA for Domestic Distribution

FUJIFILM

	Reala CS 100	Superia CN 100	Superia CA 200	Superia CH 400	Superia CZ 800	Press CZ 800
135-24	—	1.99	1.99	1.99	3.99	—
135-36	4.95	1.99	1.99	1.99	—	3.39

	Pro 160C	Pro 160S	Pro 400H	Pro 800Z
135-36	5.95	5.70	6.15	6.39
120 Roll	3.79	3.70	3.95	4.59
220 PP (5)	7.70	7.70	7.99	8.39

PROCESSING MAILERS

Fuji Slide 36 Exp. (35mm)..... 4.99

Agfa Scala Slide (35mm/120) 36 Exp. Mounted..... 10.00

AEI Processing

	35mm	120	220
Slide E6	9.49	9.49	18.95
Print C41	13.49	15.49	30.95

COLOR SLIDE FILM

Kodak

	Kodachrome KR 64 USA	EPY 64 Tungsten	Ektachrome Professional E Series 100 VS	E Series 100 G	E Series 100 GX	EPP 100
135-36	8.50	11.99	7.50	7.50	7.50	12.95
120 Roll	—	6.95	5.50	5.59	5.79	6.99
220 PP (5)	—	—	51.95	—	—	—

FUJIFILM

	Fujichrome Sensia RA 100	Fujichrome Sensia RM 200	Fujichrome Sensia RH 400	Fujichrome Professional Velvia RVP Pro 50	Velvia RVP 100	Astia RAP100F	Provia RDP100F	Provia RXP III 400X	Tungsten RTP T64
135-36	5.49	6.95	8.99	6.89	6.25	5.80	5.99	9.95	8.95
120 Roll	—	—	—	4.99	4.59	4.59	3.89	5.99	4.95
220 PP (5)	—	—	—	9.99	8.99	8.39	8.39	—	—

COLOR SLIDE FILM

Kodak

	Plus-X 125	Tri-X 400	TMX 100	TMY 400	TMZ 3200	BW 400 CN
135-36	5.95	3.95	5.50	5.50	7.50	5.50
120 Roll	—	3.95	3.95	3.95	—	4.50

ILFORD

	Pan F+ 50	FP4+ 125	HP5+ 400	Delta Pro 100	Delta Pro 400	Delta Pro 3200	XP-2 Super 400
135-36	5.50	5.50	3.95	5.50	5.50	6.50	5.50
120 Roll	3.95	3.95	3.50	3.50	3.95	4.50	3.59

FUJIFILM / AGFA

	Infrared SFX 200	Acros 100	Neopan 400	Neopan 1600	SLIDE Scala 200
135-36	8.95	4.50	2.99	4.50	12.95
120 Roll	7.95	2.95	2.95	—	—

Bags & Cases

Quick Dial 73

DPS 3N1 Sling/ Backpacks

3N1 bags provides fast equipment access and ultimate freedom, allowing three carrying options in one while morphing from sling to backpack and back again fast and easy.

	10 Small	20 Med.	30 Large
SKU #	#KA31SBS	#KA31SBM	#KA31SBL
Color	Black		
HOLDS SLRs	1	1	1
HOLDS Lens/Flash	2	4	6
HOLDS Acc.	Yes	Yes	Yes
Price	$79.95	$99.95	$124.95

Lowepro Fastpack Backpacks

Protects your equipment and provide storage for accessories. Side-entry compartments let you quickly access gear & accessories, even while you're on the move.

	200	250	350
SKU #	#LOFP200*	#LOFP250*	#LOFP350*
Color	Black, Blue, Red		
HOLDS SLRs	1	1	1
HOLDS Lens/Flash	3	4	4
HOLDS Laptop	No	15.4"	17.4"
Price	$74.95	$89.95	$112.95

TENBA Shootout Shoulder Bags

SHOOTOUT™ is designed from the ground up for serious outdoor imaging. Light on your shoulders but heavy on protection, access and features.

	Small	Medium	Large
SKU #	#TESSS*	#TESSM*	#TESSL*
Color	Black, Black/Olive, Silver/Black		
HOLDS SLRs	1	1	2
HOLDS Lens/Flash	3	4	7
HOLDS Acc.	No	No	Yes - 15"
Price	$98.95	$119.95	$159.95

tamrac Aero Backpacks

Speed Pack's Dual Entry System allows camera access via side door or front panel. Weatherproof exterior and foam padded interior compartments for a custom equipment fit.

	Speed Pack 75 3375	Speed Pack 85 3385
SKU #	#TA3375*	#TA3385*
Color	Black, Rust	
HOLDS SLRs	1	1
HOLDS Lens/Flash	3	4
HOLDS Laptop	No	17"
Price	$89.95	$119.95

Tripods

Quick Dial 73

Manfrotto bogen 190X Series

Improved castings for reduced weight without compromising strength and stability. XB features low angle adapter, XProB features vertical/horizontal quick flip center column.

	190XDB	190XB	190XPROB
SKU #	#B0190XDB	#B0190XB	#B0190XPROB
Head	Requires Head (head sold seperately)		
Load Capacity	11 lbs	11 lbs	11 lbs
Max. Height	57.5"	57.1"	57.5"
Leg Sections	3	3	3
Folded Length	21"	20.9"	22.4"
Weight	3.5 lbs	4 lbs	4 lbs
Price	$98.95	$129.95	$159.95

Manfrotto bogen 055X Series

Similar in design and features to the 190X series but with increased operating height and max load capacity. 055XB features low angle adapter, 055XproB features vertical/horizontal quick flip center column.

	055XDB	055XB	055XPROB
SKU #	#B0055XDB	#B0055XB	#B0055XPROB
Head	Requires Head (head sold seperately)		
Load Capacity	15.4 lbs	15.4 lbs	15.4 lbs
Max. Height	70"	70"	70.3"
Leg Sections	3	3	3
Folded Length	24"	24"	25.7"
Weight	4.6 lbs	5 lbs	5.3 lbs
Price	$134.95	$159.95	$174.95

BENRO Carbon Fiber "C" Series

Benro C-Series carbon fiber is lighter without compromising strength, rigidity, and performance. 2nd-Generation 8-layer carbon fiber tube technology is 40% stronger yet 15% lighter.

	C158n6	C258n6	C358n6
SKU #	#BEC158N6	#BEC258N6	#BEC358N6
Head	Requires Head (head sold seperately)		
Load Capacity	11 lbs	17.6 lbs	22 lbs
Max. Height	58.5"	60.2"	68.1"
Leg Sections	4	4	4
Folded Length	19.3"	20.9"	24"
Weight	3 lbs	3.6 lbs	5 lbs
Price	$239.95	$268.95	$384.95

GITZO Explorer Series

Six Layer, pultrusion (spun), 100% carbon fiber tubes, "G Lock" leg locks. Legs and center column. Can be locked at a wide range of angles making it the perfect wilderness field tripod. Also available in Aluminum & Basalt.

	GT2932EX	GT2330EX	GT2531EX
SKU #	#GGT2932EX	#GGT2330EX	#GGT2531EX
Head	Requires Head (head sold seperately)		
Load Capacity	22 lbs	19.8 lbs	26.4 lbs
Max. Height	59.8"	63.4"	66.9"
Leg Sections	3	3	3
Folded Length	25.2"	25.2"	25.2"
Weight	4.4 lbs	5.2 lbs	4.1 lbs
Price	$374.95	$359.95	$599.95

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PRO 614 CF
Max Height: 64.5 in.
Max Load: 6.60 lbs.

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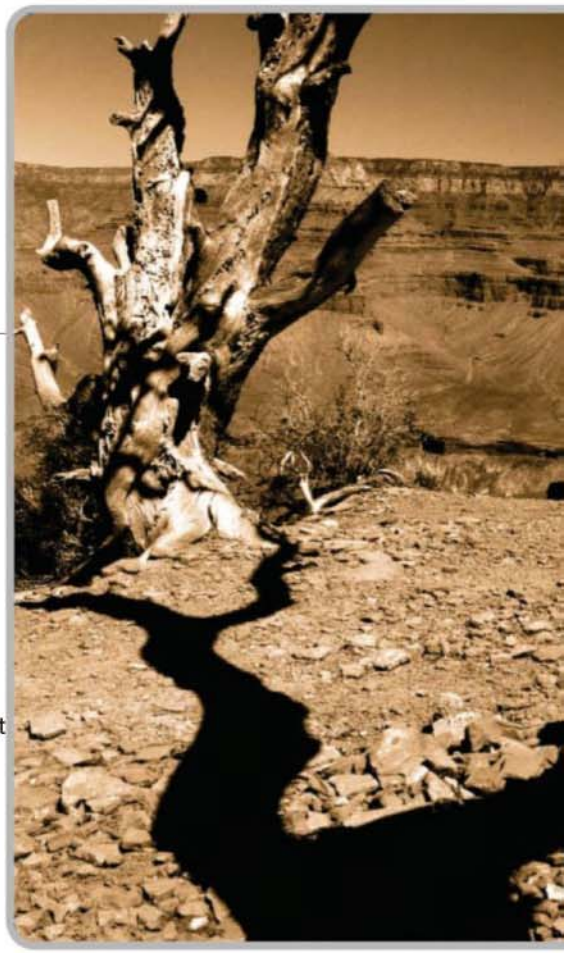

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Learn how to use an old camera

www.butkus.org/chinon

If you've uncovered a dusty camera relic—or if you're going through a film phase—visit Orphan Cameras and download instruction manuals for more than 2,500 older-model cameras. The site also provides manuals for flashes, meters, and lenses, and chemical formulas for developing and explaining printing. Old photo catalogs, too.

Find more filter effects than you need

www.photoshop-filters.com

Sort through hundreds of free Photoshop filters in more than 50 different categories at the Filter Factory. The website compiles and sorts the filters by theme, topic, or creator. Chances are there's a filter for anything you can think of doing to your photos (such as color and texture changes), and a whole lot of things you've never thought of (including effects such as rifle-sight, kaleidoscope, and something called "marble madness").

Launch your own website

members.freewebs.com

You don't need to know how to write web code or build templates to showcase your photography on the internet. Freewebs lets you choose from more than 300 templates that can hold photo albums, display videos, and even host an online store. And Freewebs partnered with Picnik.com so that you can crop, color, resize, and rotate your photos on your site.

Enlist for basic training

www.photowalkthrough.com

It's like a personal trainer for your photography. Not only does Photo Walkthrough instruct you on how to use several tools and techniques, explaining the rationale for each, but also walks you through its use in a step-by-step online video.

Turn your photos into cash

www.dotphoto.com

Promote and sell your pictures—in the form of images, photo packages, and merchandise—online through a free membership with dotPhoto. The site will help you build a profile and market your work with a free membership, and you'll get to keep up to 80 percent of your profits. If you upgrade your membership ($13/month), you'll retain a higher percentage.

Hire a volunteer business consultant

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Starting your own photography business is far from easy. Need help? SCORE is a nonprofit counseling service for small businesses. More than 10,000 volunteer counselors answer questions online 24 hours a day. For general information, check out its podcasts, online workshops, and blogs. Prefer face-to-face interaction? It has 389 offices where you can receive free advice in person.

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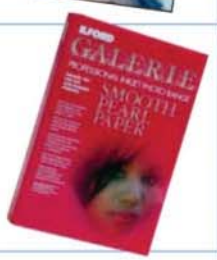

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Lens Mount	Sony	Canon EOS	Nikon AF	Pentax	SIGMA	Olympus
EF 530 DG Super	269.00	269.00	269.00	269.00	269.00	—
EF 530 DG ST	189.00	189.00	189.00	189.00	189.00	—
EM 140 DG	–	369.00	369.00	–	369.00	—

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Lens Mount	Sony	Canon EOS	Nikon AF	Pentax	SIGMA	Olympus
4.5 12.8 EX DC HSM Cir Fisheye	—	899.00	899.00	—	899.00	—
8/3-5 DG Fisheye	759.00	759.00	759.00	759.00	759.00	—
10 2.8 EX DC HSM Fisheye	—	649.00	649.00	—	649.00	—
15/2.8 EX DG Fisheye	609.00	609.00	609.00	609.00	609.00	—
20/1.8 EX-DG	459.00	459.00	459.00	459.00	459.00	—
24/1.8 EX-DG	389.00	389.00	389.00	389.00	389.00	—
28/1.8 EX-DG	299.00	299.00	299.00	299.00	299.00	—
30/1.4 EX-DC	489.00	489.00	489.00	489.00	489.00	489.00
50 1.4 EX DG HSM	499.00	499.00	499.00	499.00	499.00	499.00
50 2.8 EX DG Macro	279.00	279.00	279.00	279.00	279.00	—
70/2.8 EX DG Macro	479.00	479.00	479.00	479.00	479.00	—
105/2.8 EX-DG	439.00	439.00	439.00	439.00	439.00	439.00
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180/3.5 EX DG Macro	899.00	899.00	899.00	899.00	899.00	—
300/2.8 APO EX-DG	2999.00	2999.00	2999.00	2999.00	2999.00	—
500/4.5 APO DG	4699.00	4699.00	4699.00	4699.00	4699.00	—
800/5.6 EX APO DG HSM	7399.00	7399.00	7399.00	7399.00	7399.00	—
10-20/4-5.6 EX-DC	569.00	569.00	569.00	569.00	569.00	569.00
12-24/4.5-5.6 EX-DG Asph	779.00	779.00	779.00	779.00	779.00	—
17-70/2.8-4.5 DC Macro	399.00	399.00	399.000	399.00	399.00	—
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18-50/3.5-5.6 DG	139.00	139.00	139.00	139.00	139.00	139.00
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28-70 2.4 DG	149.00	149.00	149.00	149.00	149.00	—
28-300/3.5-5.6 DG IF Macro	319.00	319.00	319.00	319.00	319.00	—
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55-200/4-5.6 DC	149.00	149.00	149.00	149.00	149.00	149.00
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70-300/4-5.6 APO EX DG	249.00	249.00	249.00	249.00	249.00	—
70-300 /4-5.6 DL-Mac DG	149.00	149.00	149.00	149.00	149.00	—
100-300 /4 DG EX-IF HSM	1199.00	1199.00	1199.00	1199.00	1199.00	—
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120-400 F4 5.6 DG APO OS HSM	—	849.00	849.00	—	849.00	—
135-400 DG APO Asph	599.00	599.00	599.00	599.00	599.00	599.00
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200-500 2.8 EX DG APO	—	24499.00	24499.00	—	24499.00	—
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3 WAYS TO Fix a Photo's Background

BY KATHLEEN DAVIS

What surrounds the subject in a photograph can make or break the shot. Get the background wrong (too distracting or cluttered, for instance), and it draws attention away from your subject. Get it right, and it pulls together all of the elements in a photo to create a perfect composition. Here are three ways to improve your backgrounds.

1 **Watch out for competing lines, colors, and patterns.** If your subject has strong lines, for example, you want to avoid a background with any sort of line or pattern—it will make your image too busy and confusing. If possible, move your camera or your subject to avoid competition from the background.

2 **Blur it out.** Can't avoid a distracting background? Smear out the details with a shallow depth of field by shooting with a lens that has a long focal length or a wide aperture. To make your subject to stand out, or to give your picture a sense of action, try panning with your subject's movement to create a streaked and blurry background.

3 **Fill the frame.** The background won't compete with your subject if you eliminate it altogether. Either zoom in or simply step closer.

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EXPERT TIPS

BY THE BOOK

COMPILED BY KATHLEEN DAVIS

EXTREME PHOTO

Some of the best pictures are born of the worst conditions. Here are some ways to get rewarding photos in challenging situations.

- From the air: The main technical challenge is vibration, so set a fast shutter speed and use a normal or telephoto lens with image stabilization. Also, propellers often show up in photos, even when their spinning keeps you from seeing them when you look out the window.
- Underwater: Water absorbs light selectively, appearing greener near the surface and more blue deeper down. Get accurate color with flash units designed for underwater photography.
- Cold: Frigid weather can sap battery power, and going inside can cause condensation on your equipment. Enclose your gear in plastic bags or an airtight box and let it warm up before removing it.
- Heat: Most new cameras work in temperatures hotter than people even can handle. But in high humidity, mold grows fast on film and electronics. So keep your gear in a waterproof container with pack of silica gel.

ADAPTED FROM *FUNDAMENTALS OF PHOTOGRAPHY: THE ESSENTIAL HANDBOOK FOR BOTH DIGITAL AND FILM CAMERAS* BY TOM ANG (RANDOM HOUSE, 2008; $25)

MASTER OF DISGUISE

Homemade colored and diffusion filters may not match the quality of commercial ones, but they can produce results that aren't otherwise possible. Here are a few ideas to try.

- Crumple up a piece of cellophane, then smooth it out and attach it to the front of your lens with a rubber band.
- Apply a fine mist of spray matte material on an unwanted clear filter or a plain piece of glass.
- Brush some clear nail polish on an unwanted UV filter. Try different patterns for a variety of possibilities.

ADAPTED FROM *LIGHT AND LENS: PHOTOGRAPHY IN THE DIGITAL AGE* BY ROBERT HIRSCH (FOCAL PRESS, 2008; $50)

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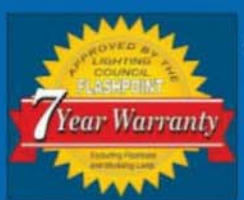

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STREET SHOOTING: Do you need to get a model release when you photograph candids of people out in public? We consulted two lawyers to find out.

YOUR QUESTIONS ANSWERED

Release police

I shoot candid street portraits and post them to my website, without model releases. Can I be sued?

Sudi Patel
Edison, NJ

The general rule: You need a model release only if you use the photos for commercial purposes, including advertising, endorsement, or trade. As long as you never sell your images for these purposes, anyone photographed in a public place (minors included) is fair game. You don't need a model release if you sell prints of the photos as art, or if they're used in an editorial context. To read up on the law as it applies to photographers, check out the websites of attorneys Bert P. Krages (www.krages.com) and Carolyn E. Wright (www.photoattorney.com)—they both specialize in photography law and have written books on the subject.

Format compatibility

I want to upgrade from a Fujifilm FinePix S3 Pro to the full-frame Nikon D700, but I own only DX

ANDERSONRISE/FOTOLIA

Nikkors, for cameras with smaller sensors. Will I get by with them, or will I have to buy all new lenses?

Francis Cramer
Via e-mail

Buy new. You'll almost certainly be disappointed with the D700 using DX lenses. Your 12.3MP Fuji S3 Pro captures much more detail with these lenses than the D700. That's because a DX throws an image circle covering only about 5.1MP of the D700's 12.1MP sensor—more than half its data is wasted. Hold off buying a D700 until you can afford at least one full-frame zoom. Not that you should immediately unload your DX lenses: In some low-light situations, the D700's sensor will give you much better pictures than the S3, regardless of lens.

Photo-friendly skies

Can airport X-ray machines affect pictures on a memory card?

Meredith Smolarek
Charlotte, NC

No. None of the security equipment for either checked baggage or carry-ons harms memory cards, CDs, or DVDs. If your camera uses lithium ion batteries, though, carry them on. They've been banned from checked luggage because they sometimes overheat and ignite. Film should also be carried on—and hand-inspected.

Acronym alert

What does ACR stand for? A website hosting Adobe Photoshop tutorials uses the term, but never explains it.

Nan Montgomery
Austin, TX

Adobe Camera Raw. It's Adobe's RAW converter plug-in for Photoshop.

Pixel problem

I needed to make large prints (12x18 inches) from files captured with a 6.3MP DSLR, but the prints are badly pixelated. Is there a way to improve them?

Raymond Wyler, III
White Plains, NY

Yes, if you captured the images in the camera's RAW format. In an image editor, convert the RAW files to TIFFs and upsize them to 12x18 inches using a tool such as Adobe Photoshop's Image Size command. Select its Bicubic Smoother option. Then sharpen the files while viewing them at 50%. Chances are your prints will look pretty good at normal viewing distances (i.e., from no closer than 6 inches.) If you shot only JPEGs, try a fractal upsizer such as onOne's Genuine Fractals Print Pro.

Profiles in paper

Does my inkjet paper have to be the same brand as my printer?

Alan Podrenko
Bethel Park, PA

It's better to stick with the same brand if you're new to printing and don't know much about color management. It's usually the easiest way to get prints that closely match your screen right off the bat. As you progress, however, you will probably be attracted to third-party papers. To use them, you'll need to visit the paper manufacturer's website and download paper profiles. Then, in Photoshop, load the profiles—the manufacturer's website will tell you how—and turn off the color management function in your printer driver. Color manage your images in Photoshop, instead.

Got a question? E-mail us at PopEditor@hfmus.com. Also visit the Tech Support forum at www.PopPhoto.com.

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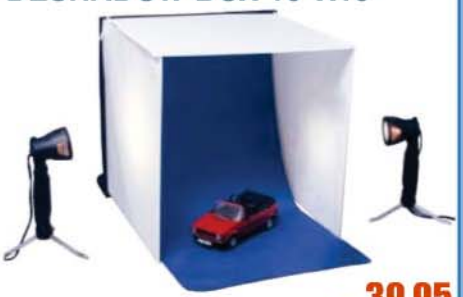

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QUOTES

"The more you look at the same exact thing, the more the meaning goes away, and the better and emptier you feel."

ANDY WARHOL

"Thinking should be done beforehand and afterwards—never while actually taking a photograph. Success depends on the extent of one's general culture, on one's set of values, one's clarity of mind and vivacity."

HENRI CARTIER-BRESSON

"When I have had such men before my camera my whole soul has endeavored to do its duty towards them in recording faithfully the greatness of the inner as well as the features of the outer man... The photograph thus taken has been almost the embodiment of a prayer."

JULIA MARGARET CAMERON

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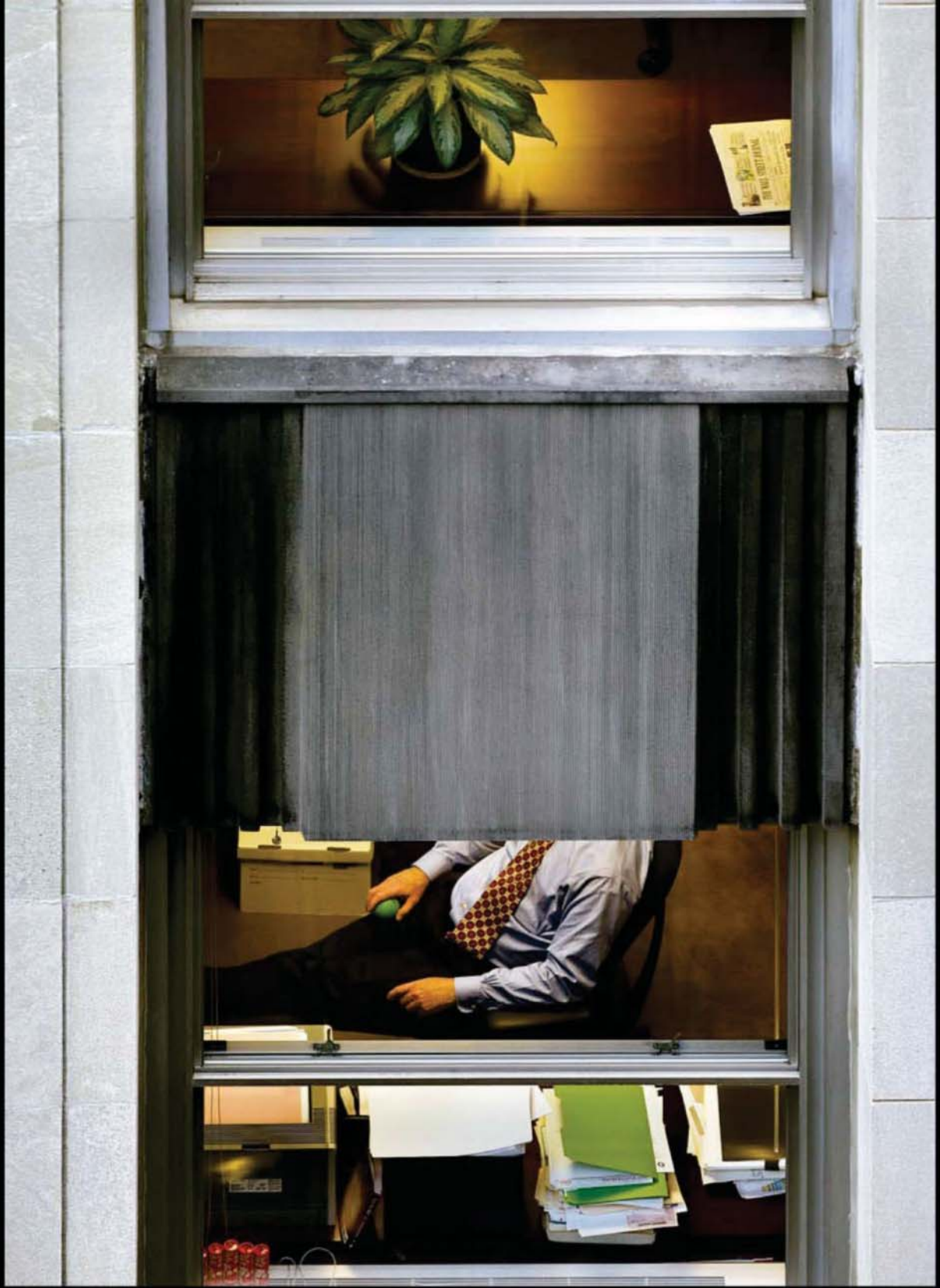
MICHAEL WOLF: FROM *THE TRANSPARENT CITY*



"Gaining access to the rooftops was a major hurdle in realizing this project—since 9/11, security is tight everywhere. Imagine me with my camera and big lens on a tripod at dusk, silhouetted up on a rooftop—I looked like a sniper. What made it possible was my artist-in-residency with U.S. Equities Realty. I went to Flickr for pictures of Chicago and drew red arrows on every rooftop that looked promising. These people knew exactly what each building was called and arranged access for me. One idea behind this was a fascination with Edward Hopper, looking through windows at people going on with banal actions. At dusk, when all of the windows in a building are lit up, there's lots of simultaneous action—it's a little voyeuristic. I used a medium-format camera with a digital back and a 300mm lens, with most exposures between 15 seconds and 1 minute 20 seconds."

MICHAEL WOLF, *THE TRANSPARENT CITY* (APERTURE/MUSEUM OF CONTEMPORARY PHOTOGRAPHY, 2008)

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